

GILA BEND POWER GENERATION STATION PROJECT

PERMIT NUMBER V00-001

PERMIT CONDITIONS

April 30, 2002

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In accordance with Maricopa County Air Pollution Control Rules and Regulations (Rules), Rule 210 § 302.2, all Conditions of this Permit are federally enforceable unless they are identified as being locally enforceable only. However, any Permit Condition identified as locally enforceable only will become federally enforceable if, during the term of this Permit, the underlying requirement becomes a requirement of the Clean Air Act (CAA) or any of the CAA's applicable requirements.

All federally enforceable terms and conditions of this Permit are enforceable by the Administrator of the United States Environmental Protection Agency (Administrator or Administrator of the USEPA hereafter) and citizens under the CAA.

Any cited regulatory paragraphs or section numbers refer to the version of the regulation that was in effect on the first date of public notice of the applicable Permit Condition unless specified otherwise.

GENERAL CONDITIONS:

1. **AIR POLLUTION PROHIBITED:** [County Rule 100 §301] [SIP Rule 3]
The Permittee shall not discharge from any source whatever into the atmosphere regulated air pollutants which exceed in quantity or concentration that specified and allowed in the County or State Implementation Plan (SIP) Rules, the Arizona Administrative Code (AAC) or the Arizona Revised Statutes (ARS), or which cause damage to property or unreasonably interfere with the comfortable enjoyment of life or property of a substantial part of a community, or obscure visibility, or which in any way degrade the quality of the ambient air below the standards established by the Maricopa County Board of Supervisors or the Director of the Arizona Department of Environmental Quality (ADEQ).
2. **CIRCUMVENTION:** [County Rule 100 §104] [40 CFR 60.12] [40 CFR 63.4(b)]
The Permittee shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of regulated air pollutants to the atmosphere, conceals or dilutes an emission which would otherwise constitute a violation of this Permit or any Rule or any emission limitation or standard. The Permittee shall not circumvent the requirements concerning dilution of regulated air pollutants by using more emission openings than is considered normal practice by the industry or activity in question.
3. **CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS:**
[County Rule 100 §401] [County Rule 210 §§301.7, 302.1e(1), 305.1c(1) & 305.1e]
Any application form, report, or compliance certification submitted under the County Rules or these Permit Conditions shall contain certification by a responsible official of truth, accuracy, and completeness of the application form or report as of the time of submittal. This certification and any other certification required under the County Rules or these Permit Conditions shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

4. COMPLIANCE:

A. COMPLIANCE REQUIRED:

- 1) The Permittee must comply with all conditions of this permit and with all applicable requirements of Arizona air quality statutes and the air quality rules. Compliance with permit terms and conditions does not relieve, modify, or otherwise affect the Permittee's duty to comply with all applicable requirements of Arizona air quality statutes and the Maricopa County Air Pollution Control Regulations. Any permit non-compliance is grounds for enforcement action; for a permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. Noncompliance with any federally enforceable requirement in this Permit constitutes a violation of the Act. [This Condition is federally enforceable if the condition or requirement itself is federally enforceable and only locally enforceable if the condition or requirement itself is locally enforceable only]

[County Rule 210 §§301.8b(4) & 302.1h(1)]

- 2) The Permittee shall halt or reduce the permitted activity in order to maintain compliance with applicable requirements of Federal laws, Arizona laws, the County Rules, or other conditions of this Permit.

[County Rule 210 §302.1h(2)]

- 3) For any major source operating in a nonattainment area for any pollutant(s) for which the source is classified as a major source, the source shall comply with reasonably available control technology (RACT) as defined in County Rule 100.

[County Rule 210 §302.1(h)(6)] [SIP Rule 220 §302.1]

Compliance with the RACT requirements of this Permit Condition for nitrogen oxides (NO_x) shall not be required if a waiver granted by the Administrator under Section 182 (f) of the Clean Air Act is in effect.

- 4) For any major source operating in a nonattainment area designated as serious for PM₁₀, for which the source is classified as a major source for PM₁₀, the source shall comply with the best available control technology (BACT), as defined in County Rule 100.

[County Rule 210 §302.1(h)(7)]

B. COMPLIANCE CERTIFICATION REQUIREMENTS:

[County Rule 210 §305.1d]

The Permittee shall file an annual compliance certification with the Control Officer and also with the Administrator of the USEPA. The report shall certify compliance with the terms and conditions contained in this Permit, including emission limitations, standards, or work practices. The certification shall be on a form supplied or approved by the Control Officer and shall include each of the following:

- 1) The identification of each term or condition of the permit that is the basis of the certification;
- 2) The compliance status;
- 3) Whether compliance was continuous or intermittent;
- 4) The method(s) used for determining the compliance status of the source, currently and over the reporting period; and

- 5) Other facts as the Control Officer may require to determine the compliance status of the source.

The annual certification shall be filed at the same time as the second semiannual monitoring report required by the Specific Condition section of these Permit Conditions and every 12 months thereafter.

- C. **COMPLIANCE PLAN:** [County Rule 210 §305.1g]
Based on the certified information contained in the application for this Permit, the facility is in compliance with all applicable requirements in effect as of the release date of the proposed conditions for this Permit. The Permittee shall continue to comply with all applicable requirements and shall meet any applicable requirements that may become effective during the term of this permit on a timely basis. [This Condition is federally enforceable if the applicable requirement itself is federally enforceable and only locally enforceable if the applicable requirement itself is locally enforceable only]

5. CONFIDENTIALITY CLAIMS:

[County Rule 100 §402] [County Rule 200 §411]

Any records, reports or information obtained from the Permittee under the County Rules or this Permit shall be available to the public, unless the Permittee files a claim of confidentiality in accordance with ARS §49-487(c) which:

- A. precisely identifies the information in the permit(s), records, or reports which is considered confidential, and
- B. provides sufficient supporting information to allow the Control Officer to evaluate whether such information satisfies the requirements related to trade secrets or, if applicable, how the information, if disclosed, could cause substantial harm to the person's competitive position.

The claim of confidentiality is subject to the determination by the Control Officer as to whether the claim satisfies the claim for trade secrets.

A claim of confidentiality shall not excuse the Permittee from providing any and all information required or requested by the Control Officer and shall not be a defense for failure to provide such information.

If the Permittee submits information with an application under a claim of confidentiality under ARS 49-487 and County Rule 200, the Permittee shall submit a copy of such information directly to the Administrator of the USEPA.

[County Rule 210 §301.5]

6. CONTINGENT REQUIREMENTS:

NOTE: This Permit Condition covers activities and processes addressed by the CAA which may or may not be present at the facility. This condition is intended to meet the requirements of both Section 504(a) of the 1990 Amendments to the CAA, which requires that Title V permits contain conditions necessary to assure compliance with applicable requirements of the Act as well as the Acid Rain provisions required to be in all Title V permits.

- A. ACID RAIN: [County Rule 210 §§302.1b(2) & 302.1f] [County Rule 371 §301]
- 1). Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the CAA and incorporated under County Rule 371, both provisions shall be incorporated into this Permit and shall be enforceable by the Administrator.
 - 2) The Permittee shall not allow emissions exceeding any allowances that the source lawfully holds under Title IV of the CAA or the regulations promulgated thereunder and incorporated under County Rule 371.
 - a) No permit revision shall be required for increases in emissions that are authorized by allowances acquired under the acid rain program and incorporated under County Rule 371, provided that such increases do not require a permit revision under any other applicable requirement.
 - b) No limit is placed on the number of allowances held by the Permittee. The Permittee may not, however, use allowances as a defense to non-compliance with any other applicable requirement.
 - c) Any such allowance shall be accounted for according to the procedures established in regulations promulgated under Title IV of the CAA.
 - d) All of the following prohibitions apply to any unit subject to the provisions of Title IV of the CAA and incorporated into this Permit under County Rule 371:
 - (1) Annual emissions of sulfur dioxide in excess of the number of allowances to emit sulfur dioxide held by the owners or operators of the unit or the designated representative of the owners or operators.
 - (2) Exceedances of applicable emission rates.
 - (3) The use of any allowance prior to the year for which it was allocated.
 - (4) Violation of any other provision of the permit.
- B. ASBESTOS: [40 CFR 61, Subpart M] [County Rule 370 §301.8 - locally enforceable only]
- The Permittee shall comply with the applicable requirements of Sections 61.145 through 61.147 and 61.150 of the National Emission Standard for Asbestos and County Rule 370 for all demolition and renovation projects.
- C. RISK MANAGEMENT PLAN (RMP): [40 CFR 68]
- Should this stationary source, as defined in 40 CFR 68.3, be subject to the accidental release prevention regulations in 40 CFR Part 68, then the Permittee shall submit an RMP by the date specified in 40 CFR Section 68.10 and shall certify compliance with the requirements of 40 CFR Part 68 as part of the annual compliance certification as required by 40 CFR Part 70. However, neither the RMP nor modifications to the RMP shall be considered to be a part of this Permit.

- D. **STRATOSPHERIC OZONE PROTECTION:** [40 CFR 82 Subparts E, F, and G]
If applicable, the Permittee shall follow the requirements of 40 CFR 82.106 through 82.124 with respect to the labeling of products using ozone depleting substances.

If applicable, the Permittee shall comply with all of the following requirements with respect to recycling and emissions reductions:

- 1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices under 40 CFR 82.156.
- 2) Equipment used during maintenance, service, repair, or disposal of appliances must meet the standards for recycling and recovery equipment in accordance with 40 CFR 82.158.
- 3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by a certified technician under 40 CFR 82.161.

If applicable, the Permittee shall follow the requirements of 40CFR Subpart G, including all Appendices, with respect to the safe alternatives policy on the acceptability of substitutes for ozone-depleting compounds.

7. **DUTY TO SUPPLEMENT OR CORRECT APPLICATION:** [County Rule 210 §301.6]
If the Permittee fails to submit any relevant facts or has submitted incorrect information in a permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, the Permittee shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a proposed permit.

8. **EMERGENCY EPISODES:** [County Rule 600 §302] [SIP Rule 72.A.5. e, f & g]
If an air pollution alert, warning, or emergency has been declared, the Permittee shall comply with any applicable requirements of County Rule 600 §302.

9. **EMERGENCY PROVISIONS:** [County Rule 130 §§201 & 402]
An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that cause the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

An emergency constitutes an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the requirements of this Permit Condition are met.

The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

- A. An emergency occurred and that the Permittee can identify the cause or causes of the emergency;
- B. At the time of the emergency, the permitted source was being properly operated;

- C. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in this permit; and
- D. The Permittee as soon as possible telephoned the Control Officer, giving notice of the emergency, and submitted notice of the emergency to the Control Officer by certified mail, facsimile, or hand delivery within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of County Rule 210 §302.1.e(2) with respect to deviation reporting. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

This provision is in addition to any emergency or upset provision contained in any applicable requirement.

10. EXCESS EMISSIONS:

[County Rule 140 §§103, 401 & 402] [locally enforceable only]

- A. Exemptions: The excess emissions provisions of this Permit Condition do not apply to the following standards and limitations:
 - 1) Promulgated pursuant to Section 111 (Standards Of Performance for New Stationary Sources) of the Clean Air Act (Act) or Section 112 (National Emission Standards For Hazardous Air Pollutants) of the Act;
 - 2) Promulgated pursuant to Title IV (Acid Deposition Control) of the Act or the regulations promulgated thereunder and incorporated under Rule 371 (Acid Rain) of these rules or Title VI (Stratospheric Ozone Protection) of the Act;
 - 3) Contained in any Prevention Of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the Environmental Protection Agency (EPA);
 - 4) Included in a permit to meet the requirements of Rule 240 (Permit Requirements For New Major Sources And Major Modifications To Existing Major Sources), Subsection 308.1(e) (Permit Requirements For Sources Located In Attainment And Unclassified Areas) of these rules.
- B. Affirmative Defense For Malfunctions: Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. The owner and/or operator of a source with emissions in excess of an applicable emission limitation due to malfunction has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the owner and/or operator of the source has complied with the excess emissions reporting requirements of these Permit Conditions and has demonstrated all of the following:
 - 1) The excess emissions resulted from a sudden and unavoidable breakdown of the process equipment or the air pollution control equipment beyond the reasonable control of the operator;
 - 2) The source's air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

- 3) If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, then the owner and/or operator satisfactorily demonstrated that such measures were impractical;
- 4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
- 5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
- 6) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
- 7) During the period of excess emissions, there were no exceedances of the relevant ambient air quality standards established in County Rule 510 that could be attributed to the emitting source;
- 8) The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
- 9) All emissions monitoring systems were kept in operation, if at all practicable; and
- 10) The owner's and/or operator's actions in response to the excess emissions were documented by contemporaneous records.

C. Affirmative Defense For Startup And Shutdown:

- 1) Except as provided in paragraph 2) below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. The owner and/or operator of a source with emissions in excess of an applicable emission limitation due to startup and shutdown has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the owner and/or operator of the source has complied with the excess emissions reporting requirements of these Permit Conditions and has demonstrated all of the following:
 - a. The excess emissions could not have been prevented through careful and prudent planning and design;
 - b. If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
 - c. The source's air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
 - d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable, during periods of such emissions;
 - e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
 - f. During the period of excess emissions, there were no exceedances of the relevant ambient air quality standards established in County

- Rule 510 (Air Quality Standards) that could be attributed to the emitting source;
- g. All emissions monitoring systems were kept in operation, if at all practicable; and
 - h. The owner's and/or operator's actions in response to the excess emissions were documented by contemporaneous records.
- 2) If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to paragraph A. of this Permit Condition.
- D. **Affirmative Defense For Malfunctions During Scheduled Maintenance:** If excess emissions occur due to malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to paragraph A. of this Permit Condition.
- E. **Demonstration Of Reasonable And Practicable Measures:** For an affirmative defense under paragraphs A and B of this Permit Condition, the owner and/or operator of the source shall demonstrate, through submission of the data and information required by this Permit Condition and the excess emissions reporting requirements of these Permit Conditions, that all reasonable and practicable measures within the owner's and/or operator's control were implemented to prevent the occurrence of the excess emissions.
- 11. FEES:** [County Rule 200 §409] [County Rule 210 §§302.1i & 401]
The Permittee shall pay fees to the Control Officer under ARS 49-480(D) and County Rule 280.
- 12. MODELING:** [County Rule 200 §407] [locally enforceable only]
Where the Control Officer requires the Permittee to perform air quality impact modeling, the Permittee shall perform the modeling in a manner consistent with the "Guideline on Air Quality Models (Revised)" (EPA-450/2-78-027R, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, July 1986) and "Supplement B to the Guideline on Air Quality Models" (U.S. Environmental Protection Agency, September 1990). Both documents shall be referred to hereinafter as "Guideline", and are adopted by reference. Where the person can demonstrate that an air quality impact model specified in the guideline is inappropriate, the model may be modified or another model substituted if found to be acceptable to the Control Officer.
- 13. MONITORING / TESTING:**
- A. The Permittee shall monitor, sample, or perform other studies to quantify emissions of regulated air pollutants or levels of air pollution that may reasonably be attributable to the facility if required to do so by the Control Officer, either by Permit or by order in accordance with County Rule 200 §309.

[County Rule 200 §309] [SIP Rule 41]

- B. Except as otherwise specified in these Permit Conditions or by the Control Officer, the Permittee shall conduct required testing used to determine compliance with standards or permit conditions established under the County or SIP Rules or these Permit Conditions in accordance with County Rule 270 and the applicable testing procedures contained in the Arizona Testing Manual for Air Pollutant Emissions or other approved USEPA test methods.

[County Rule 200 §408] [County Rule 270 §§300 & 400] [SIP Rule 27]

- C. The Permittee may use equivalent test methods and procedures in lieu of those described in this paragraph if approved by the Control Officer.

[County Rule 270 §402]

- D. The owner or operator of a permitted source shall provide, or cause to be provided, performance testing facilities as follows:

- 1) Sampling ports adequate for test methods applicable to such source.
- 2) Safe sampling platform(s).
- 3) Safe access to sampling platforms(s).
- 4) Utilities for sampling and testing equipment.

[County Rule 270 §405] [SIP Rule 42]

14. PERMITS:

- A. BASIC: [County Rule 210 §302.1h(3)]

This Permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any Permit Condition.

- B. DUST CONTROL PLAN REQUIREMENTS:

- 1) The following describe the permit applications with which a Dust Control Plan must be submitted. *(NOTE: If the Permittee engages in or allows any routine dust generating activities at the facility, the Permittee shall apply to have the routine dust generating activity covered as part of this Permit. Nonroutine activities, such as construction and revegetation, require a separate Earthmoving Permit that must be obtained from the Control Officer before the activity may begin.)*

- a) If the Permittee is required to obtain an Earthmoving Permit under Regulation II (Permits And Fees) of the County Rules, then the Permittee must first submit a Dust Control Plan and obtain the Control Officer's approval of the Dust Control Plan before commencing any dust generating operation.

- b) The Permittee must first submit a Dust Control Plan and obtain the Control Officer's approval of the Dust Control Plan before commencing any routine dust generating operation.

[County Rule 310 §303.3] [SIP Rule 310 §303.3]

- 2) A Dust Control Plan shall not be required to play on a ball field and/or for landscape maintenance. For the purpose of this Permit Condition, landscape maintenance does not include grading, trenching, nor any other mechanized surface disturbing activities.

[County Rule 200 §305] [County Rule 310 §303.4] [SIP Rule 310 §303.4]

- 3) Any Dust Control Plan shall, at a minimum, contain all the information described in Section 304 of Rule 310.

[County Rule 310 §304] [SIP Rule 310 §304]

- 4) Compliance with this section does not effect a source's responsibility to comply with the other standards of Rule 310 and these Permit Conditions. Failure to comply with the provisions of an approved Dust Control Plan or the work practice standards contained in Rule 310 §308 is deemed to be a violation of this Permit. Regardless of whether an approved Dust Control Plan is in place or not, the Permittee is still subject to all requirements of Rule 310 at all times. In addition, if the Permittee has an approved Dust Control Plan, the Permittee is still subject to all of the requirements of Rule 310, even if the Permittee is complying with the approved Dust Control Plan.

[County Rule 310 §303] [SIP Rule 310 §303]

- 5) The Permittee shall make revisions to any required Dust Control Plan when notified in writing by the Control Officer that implementation of the existing dust control plan allowed an exceedance of the standards established in Rule 310 §§301 or 302. The revised Dust Control Plan shall be submitted to the Control Officer within 3 working days of receiving the notice. During the time when the Dust Control Plan is being revised, the Permittee must still comply with the requirements of this Permit and Rule 310.

[County Rule 310 §305] [SIP Rule 310 §305]

C. PERMITS AND PERMIT CHANGES, AMENDMENTS AND REVISIONS:

[County Rule 200 §§301 & 308] [County Rule 210 §§301.4a, b, c, & 400]

- 1) The Permittee shall comply with the Administrative Requirements of Section 400 of County Rule 210 for all changes, amendments and revisions at the facility for any source subject to regulation under County Rule 200, shall comply with all required time frames, and shall obtain any required preapproval from the Control Officer before making changes. All applications shall be filed in the manner and form prescribed by the Control Officer. The application shall contain all the information necessary to enable the Control Officer to make the determination to grant or to deny a permit or permit revision including information listed in County Rule 200 §308 and County Rule 210 §§301 & 302.3.
- 2) The Permittee shall supply a complete copy of each application for a permit, a minor permit revision, or a significant permit revision directly to the Administrator of the USEPA. The Control Officer may require the application information to be submitted in a computer-readable format compatible with the Administrator's national database management system.

[County Rule 210 §§303.1a, 303.2, 405.4, & 406.4]

- 3) While processing an application, the Control Officer may require the applicant to provide additional information and may set a reasonable deadline for a response.

[County Rule 210 §301.4f]

- 4) No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

[County Rule 210 §302.1j]

D. POSTING:

- 1) The Permittee shall keep a complete permit clearly visible and accessible on the site where the equipment is installed.

[County Rule 200 §311] [SIP Rule 22F]

- 2) If a Dust Control Plan, as required by Rule 310, has been approved by the Control Officer, the Permittee shall post a copy of the approved Dust Control Plan in a conspicuous location at the work site, within on-site equipment, or in an on-site vehicle, or shall otherwise keep a copy of the Dust Control Plan available on site at all times.

[County Rule 310 §401] [SIP Rule 310 §401]

E. PROHIBITION ON PERMIT MODIFICATION:

[County Rule 200 §310]

The Permittee shall not willfully deface, alter, forge, counterfeit, or falsify this permit.

F. RENEWAL:

[County Rule 210 §§301 & 302]

- 1) The Permittee shall submit an application for the renewal of this Permit in a timely and complete manner. For purposes of permit renewal, a timely application is one that is submitted at least six months, but not more than 18 months, prior to the date of permit expiration. A complete application shall contain all of the information required by the County Rules including Rule 200 §308 and Rule 210 §§301 & 302.3.

[County Rule 210 §§301.2a, 301.4a, b, c, d, h & 302.3]

- 2) The Permittee shall file all permit applications in the manner and form prescribed by the Control Officer. To apply for a permit renewal, the Permittee shall complete the "Standard Permit Application Form" and shall supply all information, including the information required by the "Filing Instructions" as shown in Appendix B of the County Rules, which is necessary to enable the Control Officer to make the determination to grant or to deny a permit which shall contain such terms and conditions as the Control Officer deems necessary to assure a source's compliance with the requirements of the CAA, ARS and County Rules.

[County Rule 200 §§308 & 309] [County Rule 210 §301.1]

- 3) The Control Officer may require the Permittee to provide additional information and may set a reasonable deadline for a response.

[County Rule 210 §301.4f]

- 4) If the Permittee submits a timely and complete application for a permit renewal, but the Control Officer has failed to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the renewal permit has been issued or denied. This protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit, by the deadline specified by the Control Officer, any additional information identified as being needed to process the application.

[County Rule 200 §403.2] [County Rule 210 §§301.4f & 301.9]

G. REVISION / REOPENING / REVOCATION:

- 1) This permit shall be reopened and revised to incorporate additional applicable requirements adopted by the Administrator pursuant to the CAA that become applicable to the facility if this permit has a remaining permit term of three or more years. No such reopening is required if the effective date of the requirement is later than the date on which this Permit is due to expire unless the original permit or any of its terms have been extended pursuant to Rule 200 §403.2.

[County Rules 200 §402.1]

Any permit revision required under this Permit Condition, 14.G.1, shall reopen the entire permit and shall comply with provisions in County Rule 200 for permit renewal (*Note: this includes a facility wide application and public comment on the entire permit*) and shall reset the five year permit term.

[County Rules 200 §402.1a(1) & 210 §302.5]

- 2) This permit shall be reopened and revised under any of the following circumstances:
 - a) Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Title V permit.
 - b) The Control Officer or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - c) The Control Officer or the Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

Proceedings to reopen and issue a permit under this Permit Condition, 14.G.2, shall follow the same procedures as apply to initial permit issuance and shall effect only those parts of the Permit for which cause to reopen exists.

[County Rule 200 §402.1]

- 3) This permit shall be reopened by the Control Officer and any permit shall be revised, when it is determined that standards or conditions in the permit are based on incorrect information provided by the applicant.

[County Rule 210 §407.3]

- 4) This Permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Permit revision, revocation and reissuance, or termination or of a notification of planned changes or anticipated noncompliance does not stay any Permit Condition.

[County Rule 210 §302.1h(3)]

H. REVISION UNDER A FEDERAL HAZARDOUS AIR POLLUTANT STANDARD:

[County Rule 210 §301.2c] [locally enforceable only]

If the Permittee becomes subject to a standard promulgated by the Administrator under Section 112(d) of the CAA, the Permittee shall, within 12 months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

I. REQUIREMENTS FOR A PERMIT:

- 1) Air Quality Permit: Except as noted under the provisions in Sections 403 and 405 of County Rule 210, no source may operate after the time that it is required to submit a timely and complete application, except in compliance with a permit issued under County Rule 210. Permit expiration terminates the Permittee's right to operate. However, if a source submits a timely and complete application, as defined in County Rule 210 §301, for permit issuance, revision, or renewal, the source's failure to have a permit is not a violation of the County Rules until the Control Officer takes final action on the application. The Source's ability to operate without a permit as set forth in this paragraph shall be in effect from the date the application is determined to be complete until the final permit is issued. This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit, by the deadline specified in writing by the Control Officer, any additional information identified as being needed to process the application. If a source submits a timely and complete application for a permit renewal, but the Control Officer has failed to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the permit renewal has been issued or denied.

[County Rule 210 §301.9]

- 2) Earthmoving Permit:

(NOTE: If the Permittee engages in or allows any routine dust generating activities at the facility, the Permittee shall apply to have the routine dust generating activity covered as part of this Permit. Non-routine activities, such as construction and revegetation, require a separate Earthmoving Permit that must be obtained from the Control Officer before the activity may begin.)

No person shall commence any earth moving operation or any dust generating operation without meeting the requirements of and obtaining any and all Earth Moving Equipment Permits and Permits to Operate required by County Rule 200. The provisions of this section shall not apply:

- a) During emergency, life threatening situations or in conjunction with any officially declared disaster or state of emergency;
- b) To operations conducted by essential service utilities to provide electricity, natural gas, oil and gas transmission, cable television, telephone, water, and sewerage during service outages and emergency disruptions;
- c) To non-routine or emergency maintenance of flood control channels and water retention basins.

- d) To vehicle test and development facilities and operations when dust is required to test and validate design integrity, product quality and/or commercial acceptance. Such facilities and operations shall be exempted from the provisions of this section only if such testing is not feasible within enclosed facilities.

[County Rule 310 §302] [SIP Rule 310 §302]

The Permittee shall not cause, commence, suffer, allow, or engage in any earthmoving operation that disturbs a total surface area of 0.10 acre or more without first obtaining a permit from the Control Officer. Permits shall not be required for earthmoving operations for emergency repair of utilities, paved roads, unpaved roads, shoulders, and/or alleys.

[County Rule 200 §305]

- 3) Burn Permit: The Permittee shall obtain a Permit To Burn from the Control Officer before conducting any open outdoor fire except for the activities listed in County Rule 314 §§302.1 and 302.2.

[County Rule 314] [County Rule 200 §306] [SIP Rule 314]

- J. RIGHTS AND PRIVILEGES: [County Rule 210 §302.1h (4)]
This Permit does not convey any property rights nor exclusive privilege of any sort.

- K. SEVERABILITY: [County Rule 210 §302.1g]
The provisions of this Permit are severable, and, if any provision of this Permit is held invalid, the remainder of this Permit shall not be affected thereby.

- L. SCOPE:
The issuance of any permit or permit revision shall not relieve the Permittee from compliance with any Federal laws, Arizona laws, or the County or SIP Rules, nor does any other law, regulation or permit relieve the Permittee from obtaining a permit or permit revision required under the County Rules.

[County Rule 200 §308] [SIP Rule 22H]

Nothing in this permit shall alter or affect the following:

- 1) The provisions of Section 303 of the Act (Emergency Orders), including the authority of the Administrator of the USEPA under that section.
- 2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance.
- 3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Act.
- 4) The ability of the Administrator of the USEPA or of the Control Officer to obtain information from the Permittee under Section 114 of the Act, or any provision of State law.
- 5) The authority of the Control Officer to require compliance with new applicable requirements adopted after the permit is issued. [locally enforceable only]

[County Rule 210 §407.2]

M. TERM OF PERMIT: [County Rule 210 §§302.1a & 402]
This Permit shall remain in effect for no more than 5 years from the date of issuance.

N. TRANSFER: [County Rule 200 §404]
Except as provided in ARS 49-429 and County Rule 200, this permit may be transferred to another person if the Permittee gives notice to the Control Officer in writing at least 30 days before the proposed transfer and complies with the permit transfer requirements of County Rule 200 and the administrative permit amendment procedures under County Rule 210.

15. RECORDKEEPING:

A. RECORDS REQUIRED: [County Rule 100 §501] [County Rule 310 §502] [SIP Rule 40 A]
The Permittee shall maintain records of all emissions testing and monitoring, records detailing all malfunctions which may cause any applicable emission limitation to be exceeded, records detailing the implementation of approved control plans and compliance schedules, records required as a condition of any permit, records of materials used or produced, and any other records relating to the emission of air contaminants which may be requested by the Control Officer.

B. RETENTION OF RECORDS:
Unless a longer time frame is specified by these Permit Conditions, information and records required by applicable requirements and copies of summarizing reports recorded by the Permittee and submitted to the Control Officer shall be retained by the Permittee for 5 years after the date on which the information is recorded or the report is submitted

[County Rule 100 §504] [SIP Rule 40 C]

The Permittee shall retain records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

[County Rule 210 §§302.1d(2)]

C. MONITORING RECORDS: [County Rule 210 §§302.1d(1) & 305.1b(1)]
Records of any monitoring required by this Permit shall include the following:

- 1) The date, place as defined in the permit, and time of sampling or measurements;
- 2) The date(s) analyses were performed;
- 3) The name of the company or entity that performed the analysis;
- 4) The analytical techniques or methods used;
- 5) The results of such analysis; and
- 6) The operating conditions as existing at the time of sampling or measurement.

D. RIGHT OF INSPECTION OF RECORDS:
[County Rule 100 §106] [SIP Rule 40 D]

When the Control Officer has reasonable cause to believe that the Permittee has violated or is in violation of any provision of County Rule 100 or any County Rule adopted under County Rule 100, or any requirement of this permit, the Control Officer may request, in writing, that the Permittee produce all existing books, records, and other documents evidencing tests, inspections, or studies which may reasonably relate to compliance or noncompliance with County Rules adopted under County Rule 100. No person shall fail nor refuse to produce all existing documents required in such written request by the Control Officer.

16. REPORTING:

NOTE: See the Permit Condition titled Certification Of Truth, Accuracy and Completeness in conjunction with reporting requirements.

A. ANNUAL EMISSION INVENTORY REPORT:

[County Rule 100 §505] [SIP Rule 40 B]

Upon request of the Control Officer and as directed by the Control Officer, the Permittee shall complete and shall submit to the Control Officer an annual emissions inventory report. The report is due by April 30, or 90 days after the Control Officer makes the inventory form(s) available, whichever occurs later.

The annual emissions inventory report shall be in the format provided by the Control Officer.

The Control Officer may require submittal of supplemental emissions inventory information forms for air contaminants under ARS §49-476.01, ARS §49-480.03 and ARS §49-480.04.

B. DATA REPORTING:

[County Rule 100 §502]

When requested by the Control Officer, the Permittee shall furnish to the Maricopa County Air Quality Division (Division hereafter) information to locate and classify air contaminant sources according to type, level, duration, frequency, and other characteristics of emissions and such other information as may be necessary. This information shall be sufficient to evaluate the effect on air quality and compliance with the County or SIP Rules. The Permittee may subsequently be required to submit annually, or at such intervals specified by the Control Officer, reports detailing any changes in the nature of the source since the previous report and the total annual quantities of materials used or air contaminants emitted.

C. DEVIATION REPORTING:

[County Rule 210 §§302.1e & 305.1c]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions. Unless specified otherwise elsewhere in these Permit Conditions, an upset for the purposes of this Permit Condition shall be defined as the operation of any process, equipment or air pollution control device outside of either its normal design criteria or operating conditions specified in this Permit and which results in an exceedance of any applicable emission limitation or standard. The Permittee shall submit the report to the Control Officer by certified mail, facsimile, or hand delivery within 2 working days from knowledge of the deviation. The report shall contain a description of the probable cause of such deviations and any corrective actions

or preventive measures taken. In addition, the Permittee shall report within a reasonable time of any long-term corrective actions or preventative actions taken as the result of any deviations from permit requirements.

All instances of deviations from the requirements of this Permit shall also be clearly identified in the semiannual monitoring reports required in the Specific Condition section of these Permit Conditions.

- D. EMERGENCY REPORTING: [County Rule 130 §402.4]
(NOTE: Emergency Reporting is one of the special requirements which must be met by a Permittee wishing to claim an affirmative defense under the emergency provisions of County Rule 130. These provisions are listed earlier in these General Conditions in the section titled "Emergency Provisions". Since it is a form of deviation reporting, the filing of an emergency report also satisfies the requirement of County Rule 210 to file a deviation report.)
The Permittee shall, as soon as possible, telephone the Control Officer giving notice of the emergency, and submitted notice of the emergency to the Control Officer by certified mail, facsimile, or hand delivery within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.
- E. EMISSION STATEMENTS REQUIRED AS STATED IN THE ACT: [County Rule 100 §503]
Upon request of the Control Officer and as directed by the Control Officer, the Permittee shall provide the Control Officer with an emission statement, in such form as the Control Officer prescribes, showing measured actual emissions or estimated actual emissions of NO_x and volatile organic compounds (VOC) from that source. At a minimum, the emission statement shall contain all information contained in the "Guidance on Emission Statements" document as described in the USEPA's Aerometric Information Retrieval System (AIRS) Fixed Format Report (AFP 644). The statement shall contain emissions for the time period specified by the Control Officer. Statements shall be submitted annually.
- F. EXCESS EMISSIONS REPORTING: [County Rule 140 §500] [locally enforceable only]
(NOTE: This reporting subsection is associated with the requirements listed earlier in these General Conditions in the section titled "Excess Emissions".)
1) The owner and/or operator of any source shall report to the Control Officer any emissions in excess of the limits established by the County or SIP Rules or by these Permit Conditions. The report shall be in two parts as specified below:
a) Notification by telephone or facsimile within 24 hours of the time when the owner and/or operator first learned of the occurrence of excess emissions that includes all available information from paragraph 2) of this Permit Condition.
b) Detailed written notification by submission of an excess emissions report within 72 hours of the notification required by paragraph 1) a) of this Permit Condition.

- 2) The excess emissions report shall contain the following information:
 - a) The identity of each stack or other emission point where the excess emissions occurred;
 - b) The magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
 - c) The time and duration or expected duration of the excess emissions;
 - d) The identity of the equipment from which the excess emissions emanated;
 - e) The nature and cause of such emissions;
 - f) The steps taken, if the excess emissions were the result of a malfunction, to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions;
 - g) The steps that were or are being taken to limit the excess emissions; and
 - h) If this Permit contains procedures governing source operation during periods of startup or malfunction and the excess emissions resulted from startup or malfunction, a list of the steps taken to comply with the Permit procedures.
- 3) In the case of continuous or recurring excess emissions, the notification requirements of this Permit Condition shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in the notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period or changes in the nature of the emissions as originally reported shall require additional notification pursuant to paragraphs 1) and 2) of this Permit Condition.
- 4) In the case of continuous or recurring excess emissions, the notification requirements of this section shall be satisfied if the Permittee provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period or changes in the nature of the emissions as originally reported shall require additional notification that meets the criteria of Section F. 1) of this Permit Condition.

G. OTHER REPORTING:

[County Rule 210 §302.1h(5)]

The Permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing this permit, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by this Permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records directly to the Administrator of the USEPA along with a claim of confidentiality as covered elsewhere in these Permit Conditions.

17. RIGHT TO ENTRY AND INSPECTION OF PREMISES:

[County Rule 100 §105] [County Rule 210 §305.1f] [SIP Rule 43]

The Control Officer, during reasonable hours, for the purpose of enforcing and administering County Rules or any provision of ARS relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. Every person is guilty of a petty offense under ARS §49-488 who in any way denies, obstructs or hampers such entrance or inspection that is lawfully authorized by warrant.

The Permittee shall allow the Control Officer or his authorized representative, upon presentation of proper credentials and other documents as may be required by law, to:

- A. Enter upon the Permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
- B. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
- C. Inspect, at reasonable times, any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
- E. To record any inspection by use of written, electronic, magnetic, and photographic media.

[Locally enforceable only]

SPECIFIC CONDITIONS:

18. ALLOWABLE EMISSION LIMITATIONS

The allowable emission limits of these Permit Conditions are based upon the facility as currently permitted. They do not provide for facility changes or changes in the method of operation that would otherwise trigger applicable requirements including New Source Review, Prevention of Significant Deterioration or Best Available Control Technology.

A. Facility - Wide Requirements:

1) Facility Equipment

The major emitting equipment to be constructed at the facility is described in Appendix A. The Permittee shall not deviate from the equipment described in Appendix A.

[County Rule 240, §301]

2) Facility Emission Limits

In addition to emission limits expressed elsewhere in this Permit, the Permittee shall not cause, allow, or permit emissions to exceed the limits shown in Tables 1, 2, 3, and 4 *[Refer to Notes located after Table 4 at the end of this subsection and Appendix A for explanation of terms]*.

Table 1
Rolling 12-month Average Limits

	Rolling 12-month Average Emission Limits (tons per year)				
Device	SO₂	NO_x	CO	PM₁₀	VOC
Turbine and Duct Burner-1	21.0	90.2	88.0	114.0	40.5
Turbine and Duct Burner-2	21.0	90.2	88.0	114.0	40.5
Turbine and Duct Burner-3	21.0	90.2	88.0	114.0	40.5
Cooling Tower	NA	NA	NA	9.05	NA
Diesel Generator	0.06	3.9	1.05	0.12	0.11
Diesel Fire Pump	0.21	3.1	0.67	0.22	0.25
Total for the facility	63.3	277.60	265.7	351.4	121.9

[County Rule 240, §308.1(a), (d), (e)]

Table 2
Hourly Emission Limits During Periods When Turbines Operate in Other than Startup/Shutdown Mode (lb/hour) (1-hour average)

Device	SO₂	NO_x	CO	PM₁₀	VOC
Turbine and Duct Burner-1	4.8	20.6	20.1	26.02	9.2
Turbine and Duct Burner-2	4.8	20.6	20.1	26.02	9.2
Turbine and Duct Burner-3	4.8	20.6	20.1	26.02	9.2
Turbine Only, CT-1	3.9	16.8	16.36	21.15	3.0
Turbine Only, CT-2	3.9	16.8	16.36	21.15	3.0
Turbine Only, CT-2	3.9	16.8	16.36	21.15	3.0

[County Rule 240, §308.1(a), (d), (e)][40 CFR 60.43a(b), (g)][40 CFR 60.333(a)]

Table 3
Hourly Emission Limits During Periods When Turbines Operate in Startup Mode
(lb/hour) (1-hour average)

Device	NO _x	CO	VOC
Turbine Only StartupCT-1	102.5	594.0	40.0
Turbine Only Startup CT-2	102.5	594.0	40.0
Turbine Only Startup CT-3	102.5	594.0	40.0

For pollutants not included in Table 3, limits in Table 2 shall apply during startup.
[County Rule 240, §308.1(a), (d), (e)]

Table 4
Additional Concentration or Rate Emission Limits

Device	NO _x	CO	PM ₁₀ Total (Filterable plus Condensable)	SO ₂	VOC	Other	Reference
Each Combustion Turbine When Operating in Other than Startup Mode	See Cond. 18.A.6	4.0 ppmvd 3-hour rolling average	21.15 lb/hour and 0.02 lb/MMbtu (HHV)	3.9 lb/hour and 0.0021 lb/MMBT U 3-hour average	1.4 ppmvd 3-hour rolling average	Ammonia 10-ppmvd 24-hour rolling average	BACT
Each Combustion Turbine and Duct Burner	See Cond. 18.A.6	4.0 ppmvd 3-hour rolling average	26.02 lb/hour and 0.014 lb/MMbtu (HHV), 3-hour rolling average	4.8 lb/hour and 0.0021 lb/MMBT U 3-hour average	3.6 ppmvd 3-hour rolling average	Ammonia 10-ppmvd 24-hour rolling average	BACT
Cooling Towers	NA	NA	Drift eliminators capable of limiting drift to 0.0005% of cooling water flow, and Total Dissolved Solids Content of Water 10,000 ppm	NA	NA	NA	BACT
Natural Gas Fuel Sulfur Content	NA	NA	NA	NA	NA	Sulfur Content 0.0075 grains per dry standard cubic foot	BACT
Diesel Fuel Sulfur Content	NA	NA	NA	NA	NA	Sulfur Content 0.05% by weight	BACT

[County Rule 240, §308.1(a), (d), (e)] [40 CFR 60.42a(a)(1)] [40 CFR 60.42a(b)]
[40 CFR 60.43a(b)] [40 CFR 60.44a(d)(1)], [40 CFR 60.332(a)(1)],
[40 CFR 60.332(b)], [40 CFR 60.333(a)], [40 CFR 60.333(b)]

The following Notes apply to Tables 1, 2, 3, and 4.

- a) NA (Not Applicable) means that the device does not emit the indicated pollutant.
- b) NS (Not Specified) means that no additional Concentration or Rate limit is specified for that pollutant and device in Table 4.
- c) Startup is defined as the period between when the combustion Turbine and duct burner pairs are initially started until the temperature of the Combustion Turbines exhaust prior to entering the Selective Catalytic Reduction systems reaches 600 degrees Fahrenheit and the electrical load of the turbine and duct burner pair increases to above 60% of nameplate capacity.
- d) Shutdown is defined as the period beginning when the electrical load of a Turbine and duct burner pair drops below 60% of nameplate capacity and ending when combustion has ceased.
- e) The rolling twelve month limits shall be calculated monthly using the data from the most recent calendar months, with a new 12-month period beginning on the first day of each calendar month.
- f) NO_x emissions during normal operations shall be calculated in accordance with 40 CFR Part 75, Appendix F and Appendix D, except for demonstrating compliance with 40 CFR Part 60 Subparts Da and GG.
[40 CFR 75 Appendix F]
- g) To demonstrate compliance with 40 CFR 60 Subpart Da, NO_x emissions shall be calculated as required by 40 CFR 60.47a, unless a waiver from exhaust flow monitoring is granted by the Administrator and approved by the Control Officer, in which case the 40 CFR Part 75, Appendix F method shall be used, except that the data used to meet the requirements of 40 CFR 60.49a shall not include data substituted using the missing data procedures in Subpart D of 40 CFR Part 75, nor shall the data have been bias adjusted according to the procedures of 40 CFR Part 75.
[40 CFR 60.47a(c)(2)]
- h) To demonstrate compliance with 40 CFR Subpart GG, NO_x emissions shall be calculated as required by 40 CFR 60.335(c)(1) unless the Combustion Turbines are installed with a Mark V or functionally equivalent controller programmed with an algorithm acceptable to the Administrator and Control Officer that continuously corrects for variations in ambient humidity, temperature, and pressure yielding a relatively constant NO_x concentration when corrected to 15 percent oxygen, in which case the CEM data can be used without the 40 CFR 60.335(c)(1) correction.
[40 CFR 60.335(c)(1)]
- i) In the event that the NO_x or CO analyzer measuring startup/shutdown emissions is not operational or cannot reliably document emissions, startup/shutdown emissions shall be calculated by monitoring the total elapsed time during the startup/shutdown sequence and multiplying by the appropriate startup/shutdown emission rates in Table 3. An alternative

emission rate can be used if such rate is demonstrated to the satisfaction of the Control Officer to be more representative of startup/shutdown emissions.

- j) VOC and PM₁₀ emissions during normal operations and startup periods from the Turbine and duct burner pairs shall be calculated using the emission factors contained in the Permit Application dated March 2000 and subsequent application addenda 1 through 6, unless an alternative emission rate can be demonstrated to the satisfaction of the Control Officer to be more representative of emissions.
- k) PM₁₀ emissions from each Cooling Tower shall be calculated from the following equation:

$$\text{PM}_{10} \text{ Emissions (tons/yr)} = \text{Total Recirculation Rate (gallons/minute)} * \text{TDS Concentration (parts per million)} * 5.48\text{E-}09;$$

Where the value 5.48E-09 is a conversion factor for cooling tower drift rate (0.0005%), density of water (8.345 pounds per gallon), grams to tons, million parts to parts (10⁻⁶), minutes to year and one half of total particulate as PM₁₀; and the Total Recirculation Rate is the total for all twelve cells.

- l) SO₂ emissions shall be calculated from fuel usage during normal operations and startup and the sulfur content of the fuel as determined by Condition 20.G of this permit.
 - m) Unless otherwise stated, the PM₁₀ emission limits include both solid (filterable) and condensable particulate matter. Filterable PM₁₀ is measured with 40 CFR Part 60 Appendix A Method 5.
 - n) Concentration limits are parts per million by volume corrected to 15% oxygen on a dry basis, unless otherwise specified.
 - o) When multiple or alternative limits apply, the most stringent governs.
- 3) Offsite Sulfur Oxides limits:

The Permittee shall not emit into the ambient air any sulfur oxide in such manner and amounts as to result in ground level concentrations at any place beyond the premises on which the source is located exceeding the limits shown in Table 5:

Table 5
Sulfur Dioxide Ambient Concentration Limits

Concentration of Sulfur Dioxide (ug/cubic m)	Averaging Time (hours)
850	1
250	24
120	72

[SIP Rule 32 F]

4) Particulate Matter Limits (General):

The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel from any emissions unit in excess of the amounts calculated by the following equation:

$$E = 1.02 Q^{0.769} \quad \text{where:}$$

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

Q = the heat input in million Btu per hour.

[ARS §49-106, State Rule R18-2-719.C.1 (R9-3-519.C.1), SIP Rule 31(H)]

5) Opacity Limits

The Permittee shall not discharge into the ambient air from any single source of emissions any air contaminant other than condensed water containing no more than analytical trace amounts of other chemical elements or compounds, in excess of 20 percent opacity, except the following:

- a) Startup and Shutdown: Visible emissions exceeding the opacity standards for short periods of time resulting from startup, shutdown, soot blowing or unavoidable combustion irregularities which do not exceed three minutes in length shall not constitute a violation provided that the Control Officer finds that adequate control technology has been applied.
- b) Emergencies: Unavoidable combustion irregularities which exceed three minutes shall not constitute a violation of these Permit Conditions providing the owner or operator demonstrate to the Control Officer's satisfaction that an emergency exists in accordance with County Rule 130 §201.

[County Rule 300 §§ 301, 302.1,2]

Except as otherwise provided in Regulation I, Rule 4, Exceptions, the opacity of any plume or effluent from any source of emissions, other than uncombined water, shall not be greater than 40 percent opacity as determined by Reference Method 9 in the Arizona Testing Manual.

[SIP Rule 30]

6) Requirements for the Selective Catalytic Reduction Emission Control Systems

The Permittee shall install, operate, and maintain a Selective Catalytic Reduction (SCR) system as part of each Turbine and duct burner pair. For the first two years of operation starting on the date of initial startup, emissions of NO_x from each power train shall not exceed 20.6 lb/hr (based on 2.5 ppmvd at 15% O₂, on a one-hour average), excluding startup and shutdown periods as defined in Condition 18.A.2. After the first two years of operation, emissions of NO_x shall not exceed 16.5 lb/hr (based on 2.0 ppmvd at 15% O₂, on a one-hour average), excluding startup and shutdown periods as defined in Condition 18.A.2, unless the owner/operator can demonstrate to the satisfaction of the Control Officer and the Administrator that the facility has not been able to reasonably and consistently meet the NO_x demonstration limit (2.0 ppm one-hour average). The demonstration shall provide all supporting documentation demonstrating the facility's inability to meet the 2.0 ppm limit despite proper operation and

maintenance of the SCR system. The owner/operator must then submit the demonstration in a written request to The Control Officer and the Administrator prior to the two year anniversary of operation seeking a change from the 2.0 ppm limit and stating the suggested new limit. If the Control Officer and Administrator conclude that the demonstration is acceptable, the Control Officer and the Administrator shall set a new NOx emission limit at a level that they believe the Permittee can consistently and reasonably meet based upon their evaluation of the demonstration report submitted by the Permittee. However, the new emission rate shall not exceed 2.5 ppmvd at 15% O₂, on a one-hour average, excluding startup and shutdown periods as defined in Condition 18.A.2.

B. Emission Limitations For The Emergency Fire Pumps and Emergency Generators:

The Permittee shall not cause, allow or permit the emissions from the emergency fire pumps or the emergency generators to exceed 20 percent opacity, 3-minute average, except for short periods of time resulting from startup, shutdown, or unavoidable combustion irregularities which do not exceed three minutes in length.

[County Rule 300 §§301, 302]

19. OPERATIONAL REQUIREMENTS

A. Facility – Wide Operational Requirements:

- 1) The Permittee shall combust only pipeline quality natural gas with a sulfur content of 0.0075 grains per dry standard cubic foot in all devices except the emergency fire pumps and emergency generators, which shall burn only commercially available diesel fuel with sulfur content of 0.05 percent by weight or less.

[County Rule 240 §308.1(a), (d), (e)] [County Rule 320 §306.4]

- 2) The Permittee shall not emit gaseous or odorous air contaminants from equipment, operations or premises under his control in such quantities or concentrations as to cause air pollution.

[County Rule 320 §300] [locally enforceable only]

- 3) Materials including, but not limited to, solvents or other volatile compounds, paints, acids, alkalies, pesticides, fertilizer and manure shall be processed, stored, used and transported in such a manner and by such means that they will not unreasonably evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devices or equipment shall be mandatory.

[County Rule 320 § 302] [locally enforceable only]

- 4) Where a stack, vent or other outlet is at such a level that air contaminants are discharged to adjoining property, the Control Officer may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet to a degree that will adequately dilute, reduce or eliminate the discharge of air contaminants to adjoining property.

B. Operational Requirements for the Combined Cycle Units:

Each combustion turbine shall operate such that the total hours in startup mode for each system does not exceed 600 hours per year, calculated on a rolling 12 calendar month basis and 10 hours per calendar day. For the purposes of the Permit Condition, startup is defined in Note (c) after Table 4 in Permit Condition 18.A.2.

[County Rule 240 §308.1(e)]

C. Operational Requirements for the Cooling Tower:

The cooling tower shall at all times be equipped and maintained with high efficiency drift eliminators certified by the cooling tower vendor to achieve less than 0.0005 percent drift. The total dissolved solids (TDS) content of the cooling water in the cooling tower shall not exceed 10,000 parts per million (ppm).

[County Rule 240 §308.1(a), (d), (e)]

D. Operational Requirements for the Emergency Fire Pumps and Emergency Generators:

- 1) The Permittee shall operate the Emergency Fire Pumps only for emergency conditions or routine maintenance checks.
- 2) The Permittee shall operate the Emergency Generators only for emergency conditions or routine maintenance checks.

[County Rule 240 §308.1(e)]

E. Operational Requirements for the Selective Catalytic Reduction Emission Control Systems

1) Air Pollution Control Equipment and Operation

- a) On or before the date of initial startup of the power plant (as defined in Condition 22.B of this permit), and thereafter, the Permittee shall install, continuously operate, and maintain a Selective Catalytic Reduction (SCR) system and an oxidation catalyst for the control of NO_x and CO respectively. The aforementioned continuous periods of operation do not include periods of startup and shutdown, as defined in Condition 18.A.2, or periods of malfunction. The SCR system shall be designed to meet a NO_x emission limit of no more than 2.0 ppmvd, corrected to 15 percent O₂, based on a one hour rolling average (NO_x demonstration limit), for the life of the SCR catalyst during all operational modes. The SCR system must be guaranteed by the SCR vendor to meet the NO_x demonstration limit. For a period of two years commencing from the date of initial startup, the owner/operator shall install, operate, and maintain the SCR system in a manner designed to achieve the NO_x demonstration limit, and in conformance with the SCR vendor's installation, operation, and maintenance procedures.
- b) To help demonstrate the appropriate installation, operation, and maintenance of the SCR system to meet the demonstration limit, the owner/operator shall submit the following to U.S. EPA in the

indicated time-frames:

- i. Within 10 business days of their availability to the owner/operator, copies of the complete design specifications of the SCR system.
 - ii. At least one month prior to the date of initial startup, an SCR operating plan outlining how the owner/operator will ensure that the SCR system will be operated and maintained in a manner that ensures compliance with the NO_x demonstration limit. The SCR operating plan shall include recording-keeping provisions requiring the owner/operator to document all operation, maintenance, and inspection activities for the SCR system.
 - iii. On a semi-annual basis, reports of the system's performance covering the period since the last report. Each report shall include, at a minimum:
 - a. daily NO_x CEMs data;
 - b. daily fuel flow rate data;
 - c. daily gas stream flow rate and temperature data (flow going into the duct-burning system, and flow before and after the SCR system);
 - d. daily gas stream pressure drop across the SCR system.
 - iv. The first report shall be submitted within 6 months of the date of initial startup of the Facility.
- c) The Permittee shall ensure that the duct burners are not operated unless the associated turbine units are in operation.
- 2) The Permittee shall submit an approvable Operations and Maintenance (O&M) plan to the Department for each SCR system required by these Permit Conditions. The plans shall be in a format acceptable to the Department and shall specify the procedures used to maintain the SCR system. The O&M plan shall be submitted within 30 days after the equipment covered has been started up.
 - 3) The Permittee shall at all times comply with the currently approved version of the O&M Plan.
 - 4) The SCR control system shall be designed so it will not inject ammonia into the SCR system when the inlet temperature to the catalyst is less than the Minimum Catalyst Temperature to be established as part of the O&M Plans.

[County Rule 210 §302.1(c)(1) and §406]

F. Operational Requirements for the Continuous Emissions Monitoring Systems

1. Required monitoring system shall meet or exceed all applicable design, installation, operational, quality assurance, and other applicable requirements of 40 CFR Part 60.47 a; 40 CFR Part 60.334 b; 40 CFR Part 60.334 c; 40 CFR

Part 60, App. B, Spec. 2, 3; 40 CFR Part 60, App. F; 40 CFR Part 75.12; 40 CFR Part 75, Subpart C; and 40 CFR Part 75, App. A and B.

2. The fuel flow monitor shall meet or exceed specifications contained in the current (as of July, 2000) American Gas Association Report Number 3 as required in 40 CFR 75 Subpart B
3. The Permittee shall ensure that the CEMS are in operation and monitoring unit emissions at all times that the combustion Turbine and duct burner pairs combust any fuel except during periods of calibration, quality assurance, preventive maintenance, repair, back-ups of data from the data acquisition and handling system, or recertification. Malfunctions shall be recorded and reported as required in 40 CFR Part 60.47a(e).
4. The Permittee shall ensure that the design, installation, operation, maintenance, O&M/QA Plan(s), and on-site spare parts inventory are sufficient to ensure that the CEMS meet the data capture requirements of 40 CFR Parts 60 Appendix B, Appendix F, and 40 CFR 75.21.
5. The Permittee shall submit an approvable Operations and Maintenance (O&M) plan to the Department for each Continuous Emissions Monitoring System (CEMS) required by these Permit Conditions. The plans shall be in a format acceptable to the Department and shall specify applicable operating parameters necessary to ensure continuous and accurate emissions monitoring. The O&M plan shall be submitted within 30 days after the equipment covered has been started up.

[40 CFR 75, Subpart C]

6. The Permittee shall submit an approvable Quality Assurance Plan (QAP) to the Department for each CEMS required by these Permit Conditions. The plans shall be in a format acceptable to the Department. If the QAP plan has not been approved as part of the application for this permit, then the QAP shall be submitted within 30 days after the equipment covered has been started up. The Permittee shall at all times comply with the QAP.

[40 CFR 75, Subpart C]

7. A combined O&M Plan and Quality Assurance Plan for both CEMS may be submitted.

[40 CFR 75, Subpart C]

8. The Permittee shall at all times comply with the currently approved version of the O&M and QA Plans.

[40 CFR 75, Subpart C]

9. Within 90 days after commencement of commercial operations (as defined by 40 CFR 72.2), the Permittee shall certify the CEMS with a Relative Accuracy Test Audit (RATA), linearity check, cylinder gas audit (CGA), bias check, 7-day calibration error check, and cycle time check.

[40 CFR 75.4(b)(2) and 75.20(c)]

10. The Permittee shall at least annually conduct a RATA and bias check. The Permittee shall at least quarterly conduct linearity checks and cylinder gas

audits (CGA) as required by 40 CFR Part 60 Appendix F 5.1.1 and 40 CFR Part 60 Appendix F 5.1.2. The Permittee shall at least daily conduct calibration error and drift checks as required by 40 CFR Part 60 Appendix F 4.1. More frequent audits and checks shall be conducted as required by 40 CFR 60 Subpart A, Appendix F; and 40 CFR 75, Appendix B.

11. The Permittee shall ensure that all calibration gases (including zero gases) are certified and current at all times.
[40 CFR 60.47a(i)(2), and 40 CFR 75.22(c)]
12. The Permittee shall re-calibrate any CEMS after any maintenance activity that could affect the system calibration and shall re-certify as required by and within the time periods required by 40 CFR 75.20(b) whenever the Permittee makes a replacement, modification, or change that may significantly affect the ability of the system to accurately measure or record emissions.
[40 CFR 75.20(b)]
13. The Permittee shall develop and implement daily, monthly, quarterly, and annual maintenance checklists to ensure proper operation and accuracy of the CEMS. The checklists will be established as part of the O&M and QA Plans.
14. The Permittee shall maintain records of all certifications, calibrations, testing, maintenance (including completed maintenance checklists), and repairs made to the CEMS.
[County Rule 210 §302.1(c)(1)][_40 CFR Part 60.7]

G. Operational Requirements for the Oxidation Catalyst Emission Control System

- 1) The Permittee shall install, operate, and maintain an Oxidation Catalyst Emission Control System as part of each Turbine and duct burner pair.
- 2) The Permittee shall submit an approvable Operations and Maintenance (O&M) plan to the Department for each OC system required by these permit conditions. The plans shall be in a format acceptable to the Department and shall specify the procedures used to maintain the OC system. The O&M plan shall be submitted within 30 days after the equipment covered has been started up.
- 3) The Permittee shall at all times comply with the currently approved version of the O&M Plan.
[County Rule 210 §302.1(c)(1) and §406]

20. MONITORING/RECORDKEEPING REQUIREMENTS

- A. The Permittee shall hourly monitor and record the hours of operation and operating mode (startup, shutdown, or normal) of each Turbine and duct burner pair; the Turbine and duct burner pair exhaust temperature prior to entering the Selective Catalytic Reduction System; the Combined Cycle Unit exhaust temperature prior to entering the Oxidation Catalyst System; the amount of natural gas combusted in each of the Turbine and duct burner pair, and the electrical energy output of each Turbine and duct burner pair; any malfunction of air pollution control equipment; or

any periods during which a continuous monitoring system or device is inoperative. The Permittee shall monthly calculate the twelve-month total hours of operation in each mode for each Turbine and duct burner pair.

[County Rule 210 §302.1(c)(1)]

- B. The Permittee shall record the actual hours of operation and the reason for operation of the diesel fire water pump engine and the diesel back-up generator and the nature of the emergency or maintenance check that caused the engines to be used. The Permittee shall monthly calculate the twelve-month total hours of operation.

[County Rule 210 §302.1(c)(1)]

- C. Within 90 days after commencement of commercial operation as defined by 40 CFR 72.2, the Permittee shall install, calibrate, certify, and operate a continuous emission monitor for each of the Turbine and duct burner pair exhaust stacks to continuously measure carbon monoxide, oxides of nitrogen, and oxygen (or carbon dioxide) content of the exhaust stream in accordance with 40 CFR 60 Subpart Da and 40 CFR 75 requirements. Hourly average, rolling three-hour, and rolling 24-hour average values shall be continuously recorded.

[County Rule 210 §302.1(c)(2)][40 CFR 60 Subpart Da][40 CFR 75.4]

- D. The continuous emission monitors must obtain valid data for at least 18 of every 24 hours in at least 22 of every 30 consecutive days of operation.

[County Rule 210 §302.1(c)(2), County Rule 360,
40 CFR 60 Subpart Da, §60.47a(f)]

- E. Within 90 days after the commencement of commercial operations as defined by 40 CFR 72.2, the Permittee shall install, calibrate, certify, and operate natural gas fuel flow meters on each fuel line to monitor the unit-specific fuel flow to the Turbine and duct burner pairs.

[County Rule 210 §302.1(c)(2)][40 CFR 75 Subpart B]

- F. The Permittee shall install, calibrate, certify, and operate a continuous flow monitoring system and record the output of the system for measuring the flow of exhaust gases discharged to the atmosphere from the Turbine and duct burner pair, unless exempted by the Administrator and approved by the Control Officer.

[County Rule 210 §302.1(c)(2)][40 CFR 60 Subpart Da][40 CFR 60.13]
[40 CFR 75 Subpart B]

- G. The Permittee shall monitor for compliance with the sulfur dioxide limits of the Emissions Limits Tables of this permit by obtaining and recording the sulfur content of the pipeline quality natural gas used in the Turbine and duct burner pair using the following custom monitoring schedule:

- 1) The Permittee shall monitor sulfur content of the pipeline quality natural gas at least once every calendar quarter.
- 2) If at any time a fuel sulfur analysis indicates noncompliance with the fuel sulfur limit in Condition 19.A.1 of this Permit, the Permittee shall notify the Administrator and the Department of such excess emissions within one week of the analysis.

- 3) In the event of such noncompliance, the Permittee shall conduct fuel sulfur monitoring weekly until notified by the Administrator and the Department that less frequent monitoring is acceptable.
- 4) The Permittee shall determine compliance with the sulfur content limit in Condition 19.A.1 of this Permit by using measurement methods ASTM Method D172-80, ASTM Method D3031-81, ASTM Method D3246-81, or ASTM Method D4084-82 either at the site or upstream or downstream of the site. If the applicable ranges of these ASTM methods are not adequate to measure the levels of sulfur, dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator and the Control Officer.

[County Rule 210 §302.1(c)(2)][40 CFR 60.335(d), (e), §334(b)(2)]

- H. The Permittee shall obtain and record the Gross Caloric Value of the natural gas used in the Turbine and duct burner pair as required by 40 CFR Part 75, Appendix D at least as frequently as required by 40 CFR Part 75, Appendix D and Appendix G.

[County Rule 371] [40 CFR 75 Subpart D, Subpart G]

- I. For each turbine and duct burner pair the Permittee shall install and operate a wattmeter; measure gross electrical output in megawatt-hours on a continuous basis; and record the output of the monitor as indicated in 40 CFR 60.47a(k).

[40CFR60.47a(k)]

- J. Within 90 days after the commencement of commercial operations as defined by 40 CFR 72.2, the Permittee shall install, certify, and operate on each SCR system monitors to measure the ammonia injection rate. The flow meters will be sampled by a data acquisition system at a frequency of no less than once every 15 minutes and averaged into rolling 24 hours periods. These data will be used to verify compliance with the ammonia emission limits of Table 4 and the emissions testing requirements of Table 6.

[County Rule 210 §302.1(c)(1)]

- K. The Permittee shall monthly inspect the Wet Cooling Tower drift eliminators for proper installation, maintenance, and operation. The results of the inspection shall be recorded in a facility log.

[County Rule 210 §302.1(c)(2)]

- L. The Permittee shall daily monitor and record the conductivity of the cooling tower water and shall monthly monitor and record the Total Dissolved Solids (TDS) content of the cooling tower water.

[County Rule 210 §302.1(c)(1)]

- M. The Permittee shall monthly conduct a facility walk-through and observe visible emissions from each Turbine and duct burner pair exhaust stack, the diesel-fueled Fire Water Pump Engine, and the diesel-fueled Back-up Generator. The Permittee shall log the visual observations, including the date and time when that reading was taken, results of the reading, name of the person who took the reading and any other related information.

[County Rules 300, 210 §302.1(c)(1) and SIP Rule 30]

- N. If visible emissions are observed from any device capable of emitting any air contaminant other than condensed water containing no more than analytical trace amounts of other chemical elements or compounds and the facility has never had an opacity violation in the 12 months preceding the observation; the Permittee shall obtain an opacity reading conducted in accordance with EPA Reference Method 9 by a certified visible emissions (VE) reader. This reading shall be taken within 3 days of the observance of visible emissions and taken weekly thereafter during each week that the unit is in operation until there are no visible emissions. If the problem is corrected before three days has passed, and no emissions are visible, the Permittee shall not be required to conduct the certified reading. The Permittee shall log the visual observations, including the date and time when that reading was taken, results of the reading, name of the person who took the reading and any other related information. If an opacity violation has occurred at the facility in the 12 months preceding the observation of visible emissions, the required EPA Reference Method by a certified visible emissions (VE) reader shall be taken within 24 hours of the observation of visible emissions.

[County Rule 210 §302.1(c)(1)] [SIP Rule 31]

- O. Opacity shall be determined by observations of visible emissions conducted in accordance with 40 CFR Part 60 Appendix A, Method 9, except opacity of visible emissions from intermittent sources as defined by County Rule 300 §201. Opacity of visible emissions from intermittent sources shall be determined by observations conducted in accordance with 40 CFR Part 60 Appendix A, Method 9, except that at least 12 rather than 24 consecutive readings shall be required at 15-second intervals for the averaging time.

[County Rule 300 §§501, 502][locally enforceable only]

- P. The Permittee shall monitor for compliance with the particulate matter emissions limits of the permit by taking a visual emission observation of the stack emissions from each Turbine and duct burner pair during each week of operation that the equipment was used more than 10 hours. If emissions are visible, the Permittee shall obtain an opacity reading conducted in accordance with 40 CFR Part 60 Appendix A, Method 9 by a certified reader. This reading shall be taken within 3 operating days of the visible emission and taken thereafter weekly for each week when operations occur until there are no visible emissions. If the condition causing the visible emissions is eliminated before three days have passed, and no emissions are visible, the Permittee shall not be required to conduct the certified reading. If the visible emissions are present, the Control Officer may require emissions testing by other approved Reference Methods such as 40 CFR 60 Appendix A Method 5 to demonstrate compliance with the particulate matter emission limits of these Permit Conditions.

For purposes of these Permit Conditions, a certified visible emissions reader shall mean an individual who, at the time the reading is taken, is certified according to the County Rule Appendix C, Section 3.4.

[County Rule 210 §302.1.c(2) and SIP Rule 31]

- Q. The Permittee shall maintain a log of complaints of odors detected off-site. The log shall contain a description of the complaint, date and time that the complaint was received, and if given, name and/or phone number of the complainant. The logbook

shall describe what actions were performed to investigate the complaint, the results of the investigation, and any corrective actions that were taken.

[SIP Rule 32][County Rules 320 and 210 §302.1]

- R. The Permittee shall maintain a file of all measurements as required by County Rule 210 §302.1.d, including continuous emission monitoring system emission records; operating parameter records; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR Part 75 Subpart F and 40 CFR 60.48c(i) recorded in a permanent form for at least five years.
[40 CFR 60.48c(i)][40 CFR Part 75 Subpart F][County Rules 210 and 371]
- S. The Permittee shall keep all the records of the fuel supplier certification for the diesel fuel being combusted for at least five years. The supplier certification shall include:
- 1) the name of the supplier,
 - 2) the sulfur content of the fuel,
 - 3) the method used to determine the sulfur content of the fuel,
 - 4) the date that the fuel was delivered to the site, and
 - 5) the date that the fuel was sampled for sulfur content.
- [County Rules 320, 210 §302.1.c and SIP Rule 32]
- T. In addition to summary information provided in the Compliance Report submitted under these permit conditions, the Permittee shall maintain on site at least the following information that demonstrates the conclusions reached in the Compliance Report:
- 1) Hours of operation and amount of fuel burned each hour for each combustion turbine; and hours of operation of the diesel fire pumps and back-up generator engines.
[County Rules 210 and 320] [SIP Rule 32]
 - 2) Electrical energy output of each Turbine and duct burner pair for each hour of operation.
[County Rules 360 §301 and 40 CFR 60.47a]
 - 3) Dates on which visible emissions observations were taken, the test method used, and the results of the observations.
[County Rules 300, 210 and SIP Rule 30]
 - 4) Continuous Emissions Monitoring data related to the emission limits contained in this permit, calibrations, quality assurance, performance demonstrations, and certifications for the reporting period.
[County Rule 210 §302.1. c]
 - 5) Stack emissions test results related to emission limits and/or operational requirements in this Permit.
[County Rule 210 §302.1. c 0]
 - 6) Cooling tower inspection log and results of conductivity and TDS monitoring.
[County Rule 210 §302.1. c (1)]
 - 7) Odor log.
[County Rule 210 §302.1. d]
 - 8) Any other records and reports required by any Permit Condition contained in this Permit.
[County Rule 210§302.1.d and 210§302.1.e]

21. REPORTING REQUIREMENTS

- A. The Permittee shall file a written notice with the Control Officer as described in 40 CFR 60.4, 40 CFR 60.7, 40 CFR 60.19, 40 CFR 60.48c(a), and 40 CFR 60.49b(a) as follows:
- 1) A notification of commencement of construction or reconstruction of the facility postmarked within 30 days of such date.
 - 2) A notification of the actual date of initial startup of each of the Combustion Turbines and Duct Burners postmarked within 15 days of such dates.
 - 3) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under 40 CFR 60.14(e). This notice shall be postmarked within 60 days or as soon as commenced and shall include information describing the precise nature of the change, present and proposed emissions control systems, productive capacity of the facility before and after the change, and the expected completion date of the change.
 - 4) In accordance with 40 CFR 60.4, the notifications required by this Permit Condition shall be sent in duplicate to the Director, Air and Waste Management Division, Region IX of the United States Environmental Protection Agency (USEPA). A copy of the notifications shall be sent to the Control Officer.
[County Rule 360 §301] [40 CFR 60.4(a), (b), (D)]
[40 CFR 60.7(a), (b), (f)] [40 CFR 60.14(e)] [40 CFR 60.19] [40 CFR 60.48c(a)]
[40 CFR 60.49b(a)]
- B. In addition to other reports required by this Permit, the Permittee shall report nitrogen oxides concentrations to the Control Officer semiannually for each six month period post marked no later than the 30th day following the end of each six month period as required by 40 CFR 60.7(c), 40 CFR 60.7(d), 40 CFR 60.49a and 40 CFR 60.47a(c)(2) for the duct burners as follows:
- 1) The initial performance evaluation test data of the Continuous Emissions Monitor and any subsequent performance evaluation test data.
[40 CFR 60.49a(a)]
 - 2) For each 24-hour period, beginning at 12:01 AM and ending at 12:00 midnight, the following information shall be reported to the Control Officer:
 - a) Calendar date
 - b) Average nitrogen oxide emission rate in terms of lb/mmBtu for each 30 successive duct burner operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the emission limits; and, description of corrective action taken.
 - c) Identification of duct burner operating days for which nitrogen oxide or diluent data have not been obtained for at least 18 hours of operation of the duct burner; justification for not obtaining sufficient data; and description of corrective actions taken.
 - d) Identification of the times when emissions data have been excluded from the calculation rates because of startup, shutdown, malfunction, or other reasons, and justification for excluding data for reasons other than startup, shutdown, or malfunction.
 - e) Identification of the "F" factor used for calculations and method of determination.
 - f) Identification of times when hourly averages have been obtained based on manual sampling methods.

- g) Identification of the times when the pollutant concentrations exceeded full span of the continuous monitoring system.
- h) Description of any modifications to the continuous emissions monitoring system which could affect the ability of the continuous monitoring system to comply with Performance Specifications required by 40 CFR Part 75.
- i) For purposes of this subsection, a "duct burner operating day" is a 24-hour period beginning at 12:01 AM and ending at 12:00 midnight during which natural gas is combusted in a duct burner for the entire 24 hours.

[40 CFR 60.49a(b)]

- 3) If the minimum quantity of continuous emissions monitoring data as required by this permit is not obtained, and manual methods are substituted, the following information will be reported:
 - a) The number of hourly averages available for outlet emission rates from the Turbine and duct burner pair.
 - b) The standard deviation of hourly averages for outlet emission rates.
 - c) The lower confidence limit for the mean outlet emission rate.
 - d) The applicable potential combustion concentration.
 - e) The ratio of the upper confidence limit for the mean outlet emission rate.

[40 CFR 60.49a(c)]

- 4) For any periods for which nitrogen oxides emissions data are not available, the Permittee shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system are to be compared with operation of the control system before and following the period of data unavailability.

[40 CFR 60.49a(f)]

- 5) The Permittee shall submit a signed statement Indicating whether:
 - a) The required continuous emission monitoring system calibration, span, and drift checks or other period audits have or have not been performed.
 - b) The data to show compliance was or was not obtained in accordance with approved methods and procedures and is representative of plant performance.
 - c) The minimum data requirements have or have not been met; or, the minimum data requirements have not been met for errors that were unavoidable.
 - d) Compliance with the standards has or has not been achieved during the reporting period.

[40 CFR 60.49a(g)]

- 6) The Permittee shall submit an excess emissions report for NO_x emissions from the duct burners and a NO_x continuous emissions monitoring system (CEMS) performance report as required by 40 CFR 60.7(c) and the summary report form required by 40 CFR 60.7(d). The reports shall be prepared in accordance with 40 CFR 60.7(c)(1), (2), (3) and 40 CFR 60.7(d). When no excess emission have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the reports. If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and the CEMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the

summary report form specified in 40 CFR 60.7(d) shall be used and no excess emissions report shall be required.

[40 CFR 60.7(c) and (d)]

- 7) The Permittee may submit electronic reports for the information required by this Permit Condition upon coordination with the Control Officer to develop the required format and including a signed statement that indicates whether compliance with the emissions standards and minimum data requirements of this Permit were achieved during the reporting period.

[40 CFR 60.49a(j)]

- 8) Data reported under this Permit Condition shall not include data substituted using the missing data procedures in Subpart D of Part 75 nor shall the data have been bias adjusted according to the procedures of Part 75.

[40 CFR 60.47a(c)(2)].

- C. In addition to the reports filed by the Permittee in accordance with 40 CFR Part 75 Subpart G, the Permittee shall electronically report to EPA the data and information as required by 40 CFR Part 75.64 on a quarterly basis. Quarterly submittals shall include facility data, unit emission data, monitoring data, control equipment data, monitoring plans and quality assurance data and results.

[40 CFR 75 Subpart G, County Rules 210 and 371]

- D. The Permittee shall file a semiannual Compliance Report no later than April 30th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than October 31st and shall report the compliance status of the source during the period between April 1st and September 30th of the current year. The initial Compliance Report shall reflect the compliance status of the source beginning with the date of the permit issuance. The Compliance Report shall include the following information:

- 1) Summary of compliance status with respect to each condition contained in this permit; including, but not limited to a description of the basis for the summary conclusions with respect to each permit condition.
- 2) Description of and an explanation for any deviations from any permit condition at any time.
- 3) A certification that construction has not been discontinued or suspended for 18 months or more. Once construction is complete, a certification that the facility has been constructed as required by this Permit and construction has been completed.

[40 CFR 52.21]

22. TESTING REQUIREMENTS

- A. The following apply to all emissions testing required by this Permit Condition:

- 1) The Permittee shall submit an approvable test protocol to the Department, for review and approval at least 30 days prior to the emissions test. A fee for each stack to be tested shall be submitted with the test protocol as required by County Rule 280.
[County Rule 270 and 280 §301.5]

2) The Permittee shall notify the Department in writing at least two weeks in advance of the actual time and date of the emissions test so that the Division may have a representative attend. [County Rule 270 §404]

3) The Permittee shall complete and submit a report to the Department within 30 days after completion of the emissions test. The report shall summarize the results of the testing in sufficient detail to allow a compliance determination and demonstration of the appropriate ammonia Molar Ratio value to be made.

[County Rule 270 §401]

Note: All protocols, notifications and reports required by this permit condition should be addressed to the attention of the Compliance Testing Supervisor.

B. Testing Requirements for the Turbine and duct burner pair

The Permittee shall monitor for compliance with the emission limits of Tables 1, 2, and 4 by conducting stack emissions tests as specified in Table 6.

[County Rule 210 §302.1(c)(2) and (3)] [locally enforceable only][40 CFR 60.8]

**Table 6
Stack Emissions Test Requirements**

Device to be Tested	Pollutant	Method	Frequency
Each <u>Turbine and duct burner pair</u> when Operating with Duct Burners ON and 95% to 105% of nameplate capacity of the System	NO _x CO PM ₁₀ VOC	Method 7e Method 10 Method 5 and 202 Method 25a and 18	Startup and every twelve months thereafter for PM ₁₀ and VOC, every sixty months thereafter for NO _x and CO
Each <u>Turbine and duct burner pair</u> when Operating with Duct Burners ON and 95% to 105% of nameplate capacity of the System	Ammonia	Method specified by the Control Officer	Startup and every sixty months thereafter or, for any individual Heat Recovery Steam Generator, within ninety days of the ammonia (NH ₃) injection rate exceeding the value determined by Permit Condition 22.C in a single Heat Recovery Steam Generator and sixty months thereafter, whichever is more frequent
Each <u>Turbine and duct burner pair</u> when Operating with Duct Burners OFF and 95% to 105% of nameplate capacity of the Combustion Turbine	NO _x CO PM ₁₀ VOC	Method 7e Method 10 Method 5 and 202 Method 25a and 18	Startup and every twelve months thereafter for PM ₁₀ and VOC, every sixty months thereafter for NO _x and CO; unless all emission limits in Tables 2 and 4 of this Permit are met with Duct Burners ON
Each <u>Turbine and duct burner pair</u> when Operating with Duct Burners OFF and 60% to 80% of nameplate capacity of the Combustion Turbine	NO _x CO	Method 7e Method 10	Upon Initial Startup
Each <u>Turbine and duct burner pair</u> when Operating with Duct Burners OFF and 60% to 80% of nameplate capacity of the Combustion Turbine	PM ₁₀ VOC	Method 5 and 202 Method 25a and 18	Startup and every twelve months thereafter
One <u>Turbine and duct burner pair</u> when operating with Duct Burners ON and 95% to 105% of nameplate capacity.	HAPs (formaldehyde, acetaldehyde, toluene, xylene, ethylbenzene, and hexane)	Method(s) specified by the Control Officer	Startup. If annualized total HAPs exceed 2.5 tpy or if any single HAP exceeds 1 tpy from one Turbine and duct burner pair, the additional Turbine and duct burner pairs shall be tested.

[County Rule 210 §302.1(c)(2) and (3)] [locally enforceable only] [40 CFR 60.8]

[40 CFR 60, Subparts Da and GG]

- a) For purposes of testing frequency, "startup" is defined as "Within 60 days of achieving maximum production rate of the heat recovery steam generator, but not later than 180 days after actual startup".
 - b) "Method" references to 40 CFR Part 60 Appendix A emissions testing methods.
- C. The ammonia (NH₃) injection rate that triggers additional source testing as required in Table 6 shall be determined as follows:
- 1) The Trigger Rate is established by the following equation:

$$\text{Trigger Rate} = 30.43 + 2.05 * 17 * \text{MR},$$

Where:

Trigger Rate is pounds ammonia (NH₃) per hour for one Turbine and duct burner pair,
 30.43 is the pounds of ammonia emitted at 10 ppm ammonia slip,
 2.05 is the moles of NO_x to be reacted at full load with Duct Burners ON,
 17 is the molecular weight of ammonia, and
 MR is the Molar Ratio of NH₃ to NO_x.
 - 2) A default Molar Ratio (MR) of 1.50 shall be used unless an alternative MR is determined by the Control Officer to be more representative. The initial (upon startup), follow-up stack emissions tests, and/or other emissions monitoring data (whether or not required in Table 6) may be used if acceptable to the Control Officer to determine an alternative MR.
 [County Rule 210 §302.1(c)(2) and (3)] [locally enforceable only]

23. OTHER

A. PERMIT SHIELD:

None specified. The applicant has not requested permit shield from any of the applicable requirements. Therefore, this permit does not contain any permit shields.

B. COMMENCEMENT OF CONSTRUCTION:

The facility shall commence construction as defined in County Rule 100 within 18 months of the effective date of this Permit. If construction is not commenced within 18 months, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this Permit shall become invalid. The Control Officer shall terminate this Permit if construction is not begun within 18 months or if construction is suspended for more than 18 months.

[40 CFR 52.21(r)(2)][County Rule 240.304.4]

C. ACID RAIN PERMIT:

- 1) The Acid Rain Phase II Permit Application and Certificate of Representation signed by the Designated Representative on March 29, 2000 and submitted to the Control Officer, shall constitute the Permittee's Acid Rain Permit.
- 2) The Permittee shall comply with the Acid Rain Permit, 40 CFR Parts 72, 73, and 75.
- 3) The relevant Conditions of this Permit and the Acid Rain Permit, including but not limited to, the Allowable Emission Limits, Operation Requirements,

Monitoring/Recordkeeping Requirements, Reporting Requirements, and Testing Requirements shall constitute the Compliance Plan required by 40 CFR Part 72 Subpart D.

- 4) The Permittee shall hold SO₂ Allowances as of the allowance transfer deadline in each heat recovery steam generator compliance subaccount not less than the total annual actual emissions of SO₂ for the previous calendar year from each heat recovery steam generator as required by the Acid Rain Program.
- 5) The SO₂ Allowance Allocations and NO_x Requirements for each Combined Cycle System are as follows:

Affected Unit	Pollutant	Years 2000 - 2009	Years 2010 and beyond
Turbine and duct burner pair No. 1	SO ₂	NA	NA
Turbine and duct burner pair No. 1	NO _x	This unit is not subject to a NO _x limit under 40 CFR Part 76	
Turbine and duct burner pair No. 2	SO ₂	NA	NA
Turbine and duct burner pair No. 2	NO _x	This unit is not subject to a NO _x limit under 40 CFR Part 76	
Turbine and duct burner pair No. 3	SO ₂	NA	NA
Turbine and duct burner pair No. 3	NO _x	This unit is not subject to a NO _x limit under 40 CFR Part 76	

NA means no Allocations are available since these are new units.

24. PERMIT CONDITIONS FOR SURFACE COATING OPERATIONS AS SUPPORT

ACTIVITIES FOR THIS FACILITY *(Note: This does not include architectural coatings which is covered elsewhere in these permit conditions):*

A. EXEMPTIONS

- 1) Extreme performance coatings are exempt from the VOC limits contained in Table 1 of County Rule 336 §301 when used under the following conditions:
 - a) Used on internal combustion engine components that are normally above 250°F (121°C) during use; or
 - b) Used at temperatures above 250°F (121°C) on items that are included under Standard Industrial Classification codes 3661, 3663, 3677, 3678, 3679, 3769.

[County Rule 336 §305.2d]

- 2) The following operations are not applicable to County Rule 336 §§301.1, 301.2, and 302:
 - a) Low usage coatings which in aggregate of all formulations do not exceed 55 gallons (208 liters) per year facility-wide if the operator updates usage-records of these coating on each day of their use.
 - b) A small surface coating source.

[County Rule 336 §305.4c and d]

B. RECORDKEEPING AND REPORTING

The Permittee shall maintain the following records for 5 years and shall make them available to the Control Officer upon request.

- 1) The Permittee shall maintain a current list of coatings, adhesives, reducers, thinners, gun-cleaning materials, additives, and any other VOC-containing materials which includes the VOC content of each material as received (before thinning). The VOC content shall be expressed in pounds VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density.
- 2) The Permittee shall update records, showing the type and amount used of each VOC-containing material regulated by name or category in Table 1 of County Rule 336 §301 and shall update each VOC-containing materials (related to surface coatings) not contained in Table 1 of County Rule 336 §301. This includes, but is not limited to, thinners, surfacers, and dilutents. Each month's records of coating use shall be updated by the end of the following month.
- 3) Coatings and adhesives that are in the same category in Table 1 of County Rule 336 §301 and have similar VOC content may be recorded under a name that includes the category name. The highest VOC content among the members of that grouping shall be assigned to that grouping, rounded to the nearest 10th of a pound.

[County Rule 336 §501.1]

25. PERMIT CONDITIONS FOR ARCHITECTURAL COATINGS:

- A. Operational Limitations: The Permittee shall not apply any architectural coating manufactured after July 13, 1988, which is recommended for use as a bituminous pavement sealer unless it is an emulsion type coating.

[County Rule 335 §301, SIP Rule 335 §301]

The Permittee shall not apply any non-flat architectural coating manufactured after July 13, 1990, which contains more than 2.1 lbs (250 g/l) of volatile organic compounds per gallon of coating, excluding water and any colorant added to tint bases. These limits do not apply to specialty coatings.

The Permittee shall not apply any architectural coating that exceeds the following limits. Limits are expressed in pounds of VOC per gallon of coating as applied, excluding water and any colorant added to tint bases.

[County Rule 335 §303,305 and SIP Rule 335 §303,305]

SPECIALTY COATINGS:

<u>COATING</u>	(lb/gal)
Concrete Curing Compounds-	2.9
Dry Fog Coating	
Flat-	3.5
Non-flat-	3.3
Enamel Undercoaters-	2.9
General Primers, Sealers	
and Undercoaters-	2.9
Industrial Maintenance Primers and Topcoats	
Alkyds	3.5
Catalyzed Epoxy	3.5
Bituminous Coating	
Materials-	3.5

Inorganic Polymers-	3.5
Vinyl Chloride Polymers-	3.5
Chlorinated Rubbers-	3.5
Acrylic Polymers	3.5
Urethane Polymer	3.5
Silicones-	3.5
Unique Vehicles-	3.5
Lacquers-	5.7
Opaque Stains-	2.9
Wood Preservatives-	2.9
Quick Dry Enamels-	3.3
Roof Coatings-	2.5
Semi-transparent Stains-	2.9
Semi-transparent and	
Clear Wood Preservatives-	2.9
Opaque Wood Preservatives-	2.9
Specialty Flat Products-	3.3
Specialty Primers, Sealers	
and Undercoaters-	2.9
Stains, All-	2.9
Traffic Coatings	
Applied to Public Streets and Highways	2.1
Applied to other Surfaces	2.1
Black Traffic Coatings	2.1
Varnishes	2.9
Waterproof Mastic Coating-	2.5
Waterproof Sealers-	3.3
Wood Preservatives Except Below Ground	2.9

The Permittee shall not apply any flat architectural coating which contains more than 2.1 lbs (250 g/l) of volatile organic compounds per gallon of coating, excluding water and any colorant added to tint bases. These limits do not apply to specialty coatings.

[County Rule 335 §304, SIP Rule 335 §304]

The following coatings are exempt from the architectural coatings requirements specified in the permit conditions above:

- 1) Architectural coatings supplied in containers having capacities of one quart or less.
- 2) Architectural coatings recommended by the manufacturer for use solely as one or more of the following:
 - a) Below ground wood preservative coatings.
 - b) Bond breakers.
 - c) Fire retardant coatings.
 - d) Graphic arts coatings (sign paints)
 - e) Mastic texture coatings.
 - f) Metallic pigmented coatings.
 - g) Multi-colored paints.
 - h) Quick-dry primers, sealers and undercoaters.
 - i) Shellacs.
 - j) Swimming pool paints.

k) Tile-like glaze coatings.

[County Rule 335 §§306, 307 and SIP Rule 335 §§306, 307]

- B. Recordkeeping/Monitoring: The Permittee shall keep the material list of all coatings used. The material list should contain the name of each coating, short description of the material, pounds of VOCs per gallon of coating, excluding water and colorant added to tint bases and amount used. If the coating is exempt from the volatile organic compounds content requirements, the justification for the determination shall be documented and kept on file.

[County Rule 210 §302.1.c(2)]

- C. Reporting: The Permittee shall file a semiannual compliance report no later than April 30th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than October 31st and shall report the compliance status of the source during the period between April 1st and September 30th of the current year. The initial compliance report shall reflect the compliance status of the source beginning with the date of the permit issuance. Compliance report shall include material list and a list of the coatings which are exempt from the volatile organic compounds content requirements.

[County Rule 210 §302.1.e.]

- D. Testing: If required by the Control Officer testing procedures to determine compliance with prescribed VOC limits shall be consistent with Reference Methods 24 and 24A in the Arizona Testing Manual for Air Pollutant Emissions.

[County Rule 335 §500 and SIP Rule 335 §500]

26. PERMIT CONDITIONS FOR DUST GENERATING OPERATIONS:

- A. Dust Control Plan Required: The Permittee shall submit a Dust Control Plan and obtain the Control Officer's approval of the Dust Control Plan, before commencing any routine dust generating operation. The Dust Control Plan shall include all the information contained in County Rule 310, Section 304 and shall describe all control measures to be implemented before, after, and while conducting any dust generating operation, including during weekends, after work hours, and on holidays. Any control measure that is implemented must meet the applicable standards described in these permit conditions, as determined by the corresponding test method(s), as applicable, and must meet other applicable standards set forth in County Rule 310.

[County Rule 310 §303 and 303.3(b) and SIP Rule 310 §303 and 303.3(b)]

Failure to comply with the provisions of an approved Dust Control Plan is deemed to be a violation of this Permit. Regardless of whether an approved Dust Control Plan is in place or not, the Permittee is still subject to all requirements of these permit conditions at all times. In addition, the Permittee with an approved Dust Control Plan is still subject to all of the requirements of these permit conditions, even if the Permittee is complying with the approved Dust Control Plan.

[County Rule 310 §306 and SIP Rule 310 §306]

If the Control Officer determines that an approved Dust Control Plan has been followed, yet fugitive dust emissions from any given fugitive dust source still exceed limits from this permit condition, then the Permittee shall make written revisions to the Dust Control Plan and shall submit such revised Dust Control Plan to the Control Officer within three working days of receipt of the Control Officer's written notice, unless such time period is extended by the Control Officer, upon request, for good cause. During the time that the Permittee is preparing revisions to the approved Dust Control Plan, the Permittee must still comply with all requirements of these permit conditions.

[County Rule 310 §305 and SIP Rule 310 §305]

- B. Allowable Emissions: The Permittee shall not cause, suffer, allow, or engage in any dust generating or other operation which causes fugitive dust emissions exceeding 20% opacity, even during a wind event (i.e., during wind speeds of 25 mph or greater). Exceedances of the opacity limit that occur due to a wind event shall constitute a violation of the opacity limit. However, it shall be an affirmative defense in an enforcement action if the Permittee demonstrates all of the following conditions:
- 1) All control measures required were followed and one or more of the control measures listed below were applied and maintained;
 - a) Cease dust generating operations for the duration of the condition/situation/event when the 60-minute average wind speed is greater than 25 miles per hour. If dust generating operations are ceased for the remainder of the work day, stabilization measures must be implemented; or
 - b) Apply water or other suitable dust suppressant once per hour; or
 - c) Apply water as necessary to maintain a soil moisture content at a minimum of 12% as determined by ASTM Method D2216-98 or other equivalent as approved by the Control Officer and the Administrator of EPA. For areas which have an optimum moisture content for compaction of less than 12% as determined by ASTM Method D1557-91(1998) or other equivalent as approved by the Control Officer and the Administrator of EPA, maintain at least 70% of the optimum soil moisture content.
 - 2) The 20% opacity exceedance could not have been prevented by better application, implementation, operation, or maintenance of control measures;
 - 3) The Permittee compiled and retained records, in accordance with Recordkeeping requirements of this permit; and
 - 4) The occurrence of a wind event on the day(s) in question is documented by records. The occurrence of a wind event must be determined by the nearest Maricopa County Environmental Services Department Air Quality Division monitoring station, from any other certified meteorological station, or by a wind instrument that is calibrated according to manufacturer's standards and that is located at the site being checked.

[County Rule 310 §301, Table 1, and Table 2 and SIP Rule 310 §301, Table 1, and Table 2]

C. Operational Limitations:

- 1) Unpaved Access Road: The Permittee shall not allow fugitive dust emissions to exceed 20% opacity from unpaved access roads and:
 - a) Shall not allow silt loading equal to or greater than 0.33 oz/ft²; or
 - b) Shall not allow the silt content to exceed 6%; or
 - c) As an alternative to meeting the stabilization requirements for an unpaved access road, limit vehicle trips to no more than 20 per day and limit vehicle speeds to no more than 15 miles per hour. If complying with these permit conditions must include, in a Dust Control Plan, the number of vehicles traveled on the unpaved haul/access roads (i.e., number of employee vehicles, earthmoving equipment, haul trucks, and water trucks).

[County Rule 310 §302.2 and SIP Rule 310 §302.2]

- 2) Open Area Or Disturbed Surface Area: The Permittee on any disturbed surface area on which no activity is occurring shall meet at least one of the standards described below, as applicable. The Permittee shall be considered in violation of this permit if such inactive disturbed surface area is not maintained in a manner that meets at least one of the standards described below, as applicable.

- a) Maintain a visible crust; or
- b) Maintain a threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 cm/second or higher; or
- c) Maintain a flat vegetative cover (i.e., attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%; or
- d) Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 30%; or
- e) Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements; or
- f) Maintain a percent cover that is equal to or greater than 10% for non-erodible elements; or
- g) Comply with a standard of an alternative test method, upon obtaining the written approval from the Control Officer and the Administrator of the Environmental Protection Agency (EPA).

[County Rule 310 §302.3 and SIP Rule 310 §302.3]

- 3) Weed Abatement By Discing Or Blading: When engaged in weed abatement, the Permittee shall comply with the following work practices. Such work practices shall be implemented to meet the standards described in this permit condition.

- a) Apply water before weed abatement by discing or blading occurs; and
- b) Apply water while weed abatement by discing or blading is occurring; and
- c) Pave, apply gravel, apply water, or apply a suitable dust suppressant, in compliance with these permit conditions, after weed abatement by discing or blading occurs; or

- d) Establish vegetative ground cover in sufficient quantity, in compliance with these permit conditions, after weed abatement by discing or blading occurs.
[County Rule 310 §308.8 and SIP Rule 310 §308.8]
- 4) The Permittee shall not allow or engage in the following on a routine basis:
 - a) Unpaved parking lots;
 - b) Vehicle use in open areas;
 - c) Bulk material transport, hauling, handling and open storage piles;
 - d) Placement of bulk material onto paved surfaces; and
 - e) Earthmoving operations on disturbed surface areas one acre or greater.
(Earthmoving activities associated with construction may be conducted after a separate earthmoving permit is obtained from the Control Officer)
[County Rule 210 §302.1.b(1)]

D. Recordkeeping/Monitoring:

If the Permittee is required to submit and obtain approval of a Dust Control Plan, the Permittee shall keep a daily written log recording the actual application or implementation of the control measures delineated in the approved Dust Control Plan. The log or the records and supporting documentation shall be made available to the Control Officer within 48 hours, excluding weekends, from written or verbal request.

[County Rule 310 §502 and SIP Rule 310 §502]

Copies of approved Dust Control Plans, control measures implementation records, and all supporting documentation shall be retained at least five years from the date such records are established.

[County Rule 310 §503 and SIP Rule 310 §503]

E. Testing:

The following test methods shall be used as appropriate.

1) Opacity Observations:

- a) Dust Generating Operations: Opacity observations of a source engaging in dust generating operations shall be conducted in accordance with County Rules Appendix C, Section 3 (Visual Determination Of Opacity Of Emissions From Sources For Time-Averaged Regulations) of County Rule 310, except opacity observations for intermittent sources shall require 12 rather than 24 consecutive readings at 15-second intervals for the averaging time.

[County Rule 310 §501.1(a), County Rules Appendix C Section 3 and SIP Rule 310 §501.1(a), Appendix C Section 3]

- b) Unpaved Access Road: Opacity observations of any unpaved access road shall be conducted in accordance with County Rules Appendix C, Section 2.1 (Test Methods For Stabilization-For Unpaved Roads And Unpaved Parking Lots) of County Rule 310.

[County Rule 310 §501.1(c), County Rules Appendix C Section 2 and SIP Rule 310 §501.1(c), Appendix C Section 2]

2) Stabilization Observations:

- a) Unpaved Access Road: Stabilization observations for unpaved access roads shall be conducted in accordance with County Rules Appendix C, Section 2.1 (Test Methods For Stabilization-For Unpaved Roads And Unpaved Parking Lots) of County Rule 310. When more than one test method is permitted for a determination, an exceedance of the limits established in this permit determined by any of the applicable test methods constitutes a violation of these Permit conditions.

[County Rule 310 §501.2(b), County Rules Appendix C Section 2 and SIP Rule 310 §501.2(b), Appendix C Section 2]

- b) Open Area Or Disturbed Surface Area: Stabilization observations for an open area and vacant lot or any disturbed surface area on which no activity is occurring (whether at a work site that is under construction, at a work site that is temporarily or permanently inactive) shall be conducted in accordance with at least one of the techniques described in County Rule 310 subsection 501.2(c), as applicable. The Permittee shall be considered in violation of this permit if such inactive disturbed surface area is not maintained in a manner that meets at least one of the standards described in County Rule 310 subsection 302.3, as applicable.

[County Rule 310 §501.2(c) and SIP Rule 310 §501.2(c)]

3) Silt and Soil Moisture Content Methods:

- a) ASTM Method C136-96a ("Standard Test Method For Sieve Analysis Of Fine And Coarse Aggregates").
- b) ASTM Method D2216-98 ("Standard Test Method For Laboratory Determination Of Water (Moisture) Content Of Soil And Rock By Mass").
- c) ASTM Method 1557-91(1998) ("Test Method For Laboratory Compaction Characteristics Of Soil Using Modified Effort (56,000 ft-lb/ft³ (2,700 kN-m/m³))").

[County Rule 310 §504 and SIP Rule 310 §504]

27. PERMIT CONDITIONS FOR ABRASIVE BLASTING WITH OR WITHOUT BAGHOUSE:

- A. Allowable Emissions: The Permittee shall not discharge into the atmosphere from any abrasive blasting any air contaminant for a period or periods aggregating more than three minutes in any one-hour period which is a shade or density darker than 20 percent opacity.

[County Rule 312 §301] [locally enforceable only]

- B. Operational Limitations: The Permittee shall utilize at least one of the following control measures for all abrasive blasting:
 - 1) Confined blasting,
 - 2) Wet abrasive blasting,
 - 3) Hydroblasting,
 - 4) The use of a CARB certified abrasive blasting media is a permissible control measure for use in dry, unconfined blasting operations provided that the following conditions are met:

- a) Only an abrasive(s) on the most recent CARB certification list may used in the abrasive blasting process.
- b) Blasting is performed only on a metal substrate.
- c) The abrasive blasting medium is used only once.
- d) The existing paint on the surface to be abraded is lead free (i.e. lead content < 0.1%).
- e) Opacity limits of the County Rule 312 are adhered to.
- f) The object to be blasted exceeds 8 feet in any dimension or the surface to be blasted is situated at its permanent location.
- g) Blasting is not performed at ground level on a surface which may be disturbed by the process and contribute to particulate emissions (e.g. unpaved ground).

[County Rule 312 §302][locally enforceable only]

The Permittee shall not forcibly exhaust abrasive blasting equipment to the outside of the building unless the exhaust is vented through a baghouse. The baghouse shall operate within operating parameters specified in Operation and Maintenance (O&M) Plan most recently approved in writing by the Control Officer.

[County Rule 312 §302] [locally enforceable only]

C. Record Keeping: The Permittee shall keep records of the following:

- 1) The dates when abrasive blasting activities are conducted and the type of abrasive material used.
- 2) Monthly records of the type and amount of abrasive blasting media used.
- 3) Monthly opacity readings of visible emissions for each month when abrasive blasting is conducted.
- 4) Opacity reading during the external blasting.
- 5) Every inspection or preventive maintenance performed on the baghouse according to the Operation and Maintenance Plan. The Permittee shall maintain records of the key system operating parameters required by the O&M Plan. The Permittee shall keep a log demonstrating that any training requirements in the approved O&M Plan are being met.

[County Rules 312 and 210 §302.1.d] [locally enforceable only]

D. Monitoring/Testing: The Permittee shall monitor compliance with the opacity requirements of the permit conditions for abrasive blasting by observations of visible emissions conducted in accordance with EPA Reference Method 9 each time the external blasting is performed and each month the abrasive blasting with baghouse is performed for more than 10 hours.

Visible emission evaluation of abrasive blasting operations shall be conducted in accordance with the following provisions:

- 1) Emissions from unconfined blasting shall be read at the densest point of the emission after a major portion of the spent abrasives has fallen out, at a point not less than five feet nor more than 25 feet from the impact surface from any single abrasive blasting nozzle.
- 2) Emissions from unconfined blasting employing multiple nozzles shall be judged as single source unless it can be demonstrated by the Permittee that each

nozzle, evaluated separately, meets the emission standards of these Permit Conditions.

- 3) Emissions from confined blasting shall be read at the densest point after the air contaminant leaves the enclosure.

[County Rules 210 § 302.1.c and 312 §501] [locally enforceable only]

- E. Reporting: The Permittee shall file a semiannual compliance report no later than April 30th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than October 31st and shall report the compliance status of the source during the period between April 1st and September 30th of the current year. The initial compliance report shall reflect the compliance status of the source beginning with the date of the permit issuance. Compliance report shall include a summary of the opacity readings and date of such readings during external blasting and blasting with baghouse, control measures utilized for abrasive blasting and dates on which any blasting was performed.

[County Rules 312 and 210 § 302.1.e.(1)] [locally enforceable only]

28. PERMIT CONDITIONS FOR THE COLD DEGREASERS AS SUPPORT ACTIVITIES FOR THIS FACILITY:

A. OPERATIONAL LIMITATIONS/STANDARDS:

All cleaning machines shall be one of the following types:

- 1) Batch loaded cold cleaners with remote reservoir;
- 2) Batch loaded cold cleaners without a remote reservoir (such as solvent dip tank);
- 3) Shall use only low VOC cleaner (A low VOC cleaner is any solution or homogeneous suspension that, as used, contains less than 50 grams of VOC per liter of material (0.42 lb VOC/gal) or is at least 95% water by weight or volume as determined by an applicable test method in Section 502 of County Rule 331); OR
- 4) A sealed system. A sealed system is one that meets all of the following requirements:
 - a) Is an airtight or airless cleaning system, which is operated according to the manufacturer's specifications and, unless otherwise indicated by the manufacturer, meets all of the following requirements:
 - b) Has a door or other pressure-sealing apparatus that is shut during each cleaning and drying cycle.
 - c) Has a differential pressure gauge that always indicates the pressure in the sealed chamber when occupied or in active use.
 - d) Any associated pressure relief device(s) shall be so designed and operated as to prevent liquid cleaning-solvents from draining out.

[County Rule 210 §302.1]

B. SOLVENT HANDLING REQUIREMENTS:

- 1) All cleaning-solvent, including solvent soaked materials, shall be kept in closed leakfree containers that are opened only when adding or removing material. Each container shall be clearly labeled with its contents.
- 2) If an cleaning-solvent escapes from a container:

- a) Wipe up or otherwise remove immediately if in accessible areas.
 - b) For areas where access is not feasible during normal production, remove as soon as reasonably possible.
- 3) Unless records show that VOC-containing cleaning material was sent offsite for legal disposal, it will be assumed that it evaporated on site.
[County Rule 331 §301]

C. EQUIPMENT REQUIREMENTS FOR ALL CLEANING MACHINES:

- 1) The Permittee shall provide a leakfree container (degreaser) for the solvents and the articles being cleaned.
- a) The VOC-containment portion shall be impervious to VOC-containing liquid and vapors.
 - b) No surface of any freeboard required by this rule shall have an opening or duct through which VOC can escape to the atmosphere except as required by OSHA.
[County Rule 331 §302.1] [SIP Rule 331 §301]
- 2) The Permittee shall maintain and operate all cleaning machine equipment required by this rule and any of its emission controls required by this rule.
[County Rule 331 §302.2] [SIP Rule 331 §306.1]
- 3) The Permittee shall not dispose of any solvent, including waste solvent, in such a manner as will cause or allow its evaporation into the atmosphere. Records of its disposal/recovery shall be kept in accordance with hazardous waste disposal statutes.
[SIP Rule 331 §306.4]

D. SPECIFIC OPERATING AND SIGNAGE REQUIREMENTS FOR CLEANING MACHINES:

- 1) The Permittee shall conform to the following operating requirements when cleaning with cleaning-solvents other than Low-VOC Cleaners:
- a) Comfort fans shall not be used near cleaning machines;
 - b) Do not remove any device designed to cover the solvent unless processing work in the cleaning machine or maintaining the machine;
 - c) Drain cleaned parts for at least (15) fifteen seconds after cleaning or until dripping ceases, whichever is later;
 - d) If using a cleaning-solvent spray system:
 - (1) Use only a continuous, undivided stream (not a fine, atomized, or shower type spray).
 - (2) Pressure at the orifice from which the solvent emerges shall not exceed (10) ten pounds per square inch, gauge (psig) and shall not cause liquid solvent to splash outside the solvent container.
 - (3) In an in-line cleaning machine, a shower-type spray is allowed, provided that the spraying is conducted in a totally confined space that is separated from the environment.
 - (4) Exceptions to the foregoing subsections (1), (2), and (3) are provided for in Special Non-vapor Cleaning Situations in the section titled the same below.
 - e) The Permittee shall not cause agitation of a cleaning-solvent in a cleaning machine by sparging with air or other gas. Covers shall

be placed over ultrasonic cleaners when the cleaning cycle exceeds (15) fifteen seconds;

- f) The Permittee shall not place porous or absorbent materials in or on a cleaning machine. This includes, but is not limited to, cloth, leather, wood, and rope. No object with a sealed wood handle, including a brush, is allowed;
- g) The ventilation rate at the cleaning machine shall not exceed 65 cubic feet per minute per square foot of evaporative surface (20 cubic meters per minute per square meter), unless that rate must be changed to meet a standard specified and certified by a Certified Safety Professional, a Certified Industrial Hygienist, or a licensed professional engineer experienced in ventilation, to meet health and safety requirements;
- h) Limit the vertical speed of mechanical hoists moving parts in and out of the cleaning machine to a maximum of 2.2 inches per second and 11 feet per minute (3.3 meters per minute);
- i) The Permittee shall prevent cross contamination of solvents regulated by Section 304 of Rule 331 with solvents that are not so regulated. Use signs, separated work-areas, or other effective means for this purpose. This includes those spray gun cleaning solvents that are regulated by another rule.

[County Rule 331 §303.1] [SIP Rule 331 §306]

- 2) When using cleaning-solvent, other than Low-VOC Cleaner, in any solvent cleaning machine (degreaser) or dip tank, the Permittee shall provide the following signage requirements on the machine, or within 3¼ feet (1 meter) of the machine, a permanent, conspicuous label, or placard which includes, at a minimum, each of the following applicable instructions, or its equivalent:
 - a) "Keep cover closed when parts are not being handled." (This is not required for remote reservoir cleaners.)
 - b) "Drain parts until they can be removed without dripping."
 - c) "Do not blow off parts before they have stopped dripping."
 - d) "Wipe up spills and drips as soon as possible; store used spill rags [or 'wiping material'] in covered container."
 - e) "Don't leave cloth or any absorbent materials in or on this tank."
 - f) For cleaning machines with moving parts such as hoists, pumps, or conveyors, post: "Operating instructions can be obtained from _____" listing a person or place where the instructions are available.

[County Rule 331 §303.2] [SIP Rule 331 §306]

E. SOLVENT SPECIFICATION

- 1) All cleaning solvents, except Low-VOC Cleaners, shall be conforming solvents. A conforming solvent is one which has a total VOC vapor pressure at 68°F (20°C) not exceeding (2) two millimeters of mercury column maximum total VOC vapor pressure through October 31, 2001; or 1 millimeter of mercury column maximum total VOC vapor pressure from November 1, 2001 and thereafter.
- 2) A nonconforming solvent may be used if it is utilized in a sealed system.

[County Rule 331 §304]

F. BATCH CLEANING MACHINES

- 1) The Permittee shall equip each batch cleaning machine with remote reservoir, including the cabinet type(s), with the following:
 - a) A sink-like work area or basin which is sloped sufficiently towards the drain so as to prevent pooling of cleaning-solvent.
 - b) A single, unimpeded drain opening or cluster of openings served by a single drain for the cleaning-solvent to flow from the sink into the enclosed reservoir. Such opening(s) shall be contained within a contiguous area not larger than 15.5 square inches (100 square centimeters).
 - c) Provide a means for drainage of cleaned parts such that the drained solvent is returned to the cleaning machine.

[County Rule 331 §305.1] [SIP Rule 331 §302.1]

- 2) The Permittee shall equip each batch cleaning machine without a remote reservoir with all of the following:
 - a) Have and use an internal drainage rack or other assembly that confines within the freeboard all cleaning-solvent dripping from parts and returns it to the hold of the cleaning machine (degreaser).
 - b) Have an impervious cover which when closed prevents cleaning-solvent vapors in the cleaning machine from escaping into the air/atmosphere when not processing work in the cleaning machine. The cover shall be fitted so that in its closed position the cover is between the cleaning-solvent and any lip exhaust or other safety vent, except that such position of cover and venting may be altered by an operator for valid concerns of flammability established in writing and certified to by a Certified Safety Professional or a Certified Industrial Hygienist to meet health and safety requirements.
 - c) The freeboard height shall be not less than 6 inches (15.2 centimeters). Freeboard height for batch cleaning machines is the vertical distance from the solvent/air interface to the least elevated point of the top-rim when the cover is open or removed, measured during idling mode.
 - d) The freeboard zone shall have a permanent, conspicuous mark that locates the maximum allowable solvent level which conforms to the applicable freeboard requirements.

[County Rule 331 §305.2] [SIP Rule 331 §302.2]

G. SPECIAL NON-VAPOR CLEANING SITUATIONS

- 1) The Permittee shall operate and equip the devices as follows when blasting or misting with conforming solvents;
 - a) The device shall have internal drainage, a reservoir or sump, and a completely enclosed cleaning chamber, designed so as to prevent any perceptible liquid from emerging from the device; and
 - b) The device shall be operated such that there is no perceptible leakage from the device except for incidental drops from drained, removed parts.

[County Rule 331 §307.1]

- 2) The Permittee shall use a sealed system for all blasting or misting with a non-conforming solvent.

[County Rule 331 §307.2]

- 3) Cleaning systems using cleaning-solvent that emerges from an object undergoing flushing with a visible mist or at a pressure exceeding 10 psig, shall comply as follows;

- a) For conforming solvents, use a containment system that is designed to prevent any perceptible cleaning-solvent liquid from becoming airborne outside the containment system, such as a completely enclosed chamber.
- b) Use a sealed system for non-conforming solvents.

[County Rule 331 §307.3]

H. MONITORING/RECORDKEEPING:

- 1) The Permittee shall maintain a current list of cleaning-solvents; state the VOC-content of each in pounds VOC per gallon of material or grams per liter of material.
- 2) The Permittee shall record the amount of cleaning-solvent used at the end of each month for the previous month. Show the type and amount of each make-up and all other cleaning-solvent.
- 3) Annually the Permittee shall document the use of concentrate that is used only in the formulation of Low VOC Cleaner.
- 4) Annually the Permittee may, for purposes of recording usage, give cleaning-solvents of similar VOC content a single group-name, distinct from any product names in the group. The total usage of all products in that group are then recorded under just one name. (In such case the Permittee shall also keep a separate list that identifies the product names of the particular solvents included under the group name.) To the group name shall be assigned the highest VOC content among the members of that group, rounded to the nearest 10th of a pound of VOC per gallon of material, or to the nearest gram VOC per liter of material.

[County Rule 331 §501] [SIP Rule 331 §501]

I. REPORTING:

The Permittee shall include the following information in each semiannual compliance report;

- 1) certification that the operational requirements, specifically applicable to the Permittee's type of cleaning, continue to be in compliance;
- 2) a summary of the listed cleaning-solvents currently used at the facility and state the VOC-content of each in VOC per gallon of material or grams per liter of material;
- 3) certification that monthly and annual recordkeeping was performed as directed in the monitoring/recordkeeping requirements above; and
- 4) a summary of any testing that may have been performed during the period.

[County Rule 210 302.1e(1)]

J. TESTING (if applicable):

- 1) As required by the Control Officer, the VOC content of solutions, dispersions, emulsions, and conforming solvents shall be determined by one of the following methods:
 - a) South Coast Air Quality Management District Method 313-91;
 - b) Bay Area Air Quality Management District Method 31;
 - c) Solids-free solutions, in which all organic components are VOCs, may be tested using Maricopa County Reference Method #100,

"Total Organic Carbon for Windshield Washer Fluids", Maricopa County Air Pollution Control Rule 344 (April 7, 1999).

- 2) Within 60 days of permit issuance, the Permittee shall determine the VOC content of gaseous emissions entering and exiting the ECS by either EPA Method 18 or Method 25 or its sub-method.
- 3) Within 60 days of permit issuance, the Permittee shall determine the capture efficiency of the emission control device used by either using EPA Method 204 and its sub-methods, or by using mass balance calculation methods in concert with EPA Methods 2, 2a, 2c, and 2d.
[County Rule 331 §502] [SIP Rule 331 §502]

29. PERMIT CONDITIONS FOR WIPE CLEANING:

A. Operational Limitations: The Permittee shall conform to the following operating requirements:

- 1) All solvent storage, including the storage of waste solvent and waste solvent residues, shall at all times be in closed leakfree containers which are legibly labeled with their contents and that are opened only when adding or removing material. Rags used for wipe cleaning shall be stored in closed containers when not in use.
[County Rule 331 §301.1] [SIP Rule 331 §306.3] [SIP Rule 34C.1.(c)]
- 2) Do not dispose of any solvent, including waste solvent, in such a manner as will cause or allow its evaporation into the atmosphere.
[SIP Rule 331 §306.4] [SIP Rule 34K]

B. Monitoring/Recordkeeping: The Permittee shall:

- 1) Maintain a current list of solvents; state the VOC content of each in pounds per gallons or grams per liter. The VOC content of solvents and any liquids used as cleaning or degreasing agents shall be stated with water and non-precursors included.
[County Rule 331 §501.1]
- 2) Maintain monthly records showing the type and amount of each make up solvent added and any other VOC-containing materials used.
[County Rule 331 §501.2(a)], [SIP Rule 331 §501]
- 3) Monthly visually inspect the facility to ensure that operational limitations of Permit Condition 31.A(1) and (2) are being met.
[County Rule 210 §302.1.c]
- 4) Records of solvents disposal/recovery shall be kept in accordance with hazardous waste disposal statutes.
[SIP Rule 331 Section 306.4]

C. Reporting: The Permittee shall file a semiannual compliance report starting from this permit issuance date within 30-days of the end of the 6-month period to the Division with attention to Large Sources Compliance Supervisor containing the current list and summary of usage records of the solvents.

30. PERMIT CONDITIONS FOR CUTBACK AND EMULSIFIED ASPHALT:

A. Operational Limitations:

The Permittee shall not use or apply the following materials for paving, construction, or maintenance of highways, streets, driveways, parking lots or for any other use to which County Rule 340 §300 and SIP Rule 340 §300 applies:

- 1) Rapid cure cutback asphalt.
- 2) Any cutback asphalt material, road oils, or tar which contains more than 0.5 percent by volume VOCs which evaporate at 500°F (260°C) or less using ASTM Test Method D 402-76.
- 3) Any emulsified asphalt or emulsified tar containing more than 3.0 percent by volume VOCs which evaporate at 500°F (260°C) or less as determined by ASTM Method D 244-89.

[County Rule 340 §301 and SIP Rule 340 §301]

The Permittee shall not store for use any emulsified or cutback asphalt product which contains more than 0.5 percent by volume solvent-VOC unless such material lot includes a designation of solvent-VOC content on data sheet(s) expressed in percent solvent-VOC by volume.

[County Rule 340 §303 and SIP Rule 340 §303]

- B. Exemptions:** The provisions of these Permit Conditions shall not apply to asphalt that is used solely as a penetrating prime coat and which is not a rapid cure cutback asphalt. Penetrating prime coats do not include dust palliatives or tack coats.

[County Rule 340 §302.1 and SIP Rule 340 §302.1]

The Permittee may use up to 3.0 percent solvent-VOC by volume for batches of asphalt rubber which cannot meet paving specifications by adding heat alone only if request is made to the Control Officer, who shall evaluate such requests on a case-by-case basis. Approval of such a request shall not be granted unless the Permittee keeps complete records and full information is supplied including savings realized by using discarded tires. Approval of such a request shall not be granted when it would cause the Permittee to exceed 1100 lbs (500 kg) usage of solvent-VOC in asphalt rubber in a calendar year unless the Permittee can demonstrate that in the previous 12 months no solvent-VOC has been added to at least 95 percent by weight of all the asphalt rubber binder made by the Permittee or caused to be made for the Permittee. This Permit Condition does not apply to batches which yield 0.5 percent or less solvent-VOC evaporated using the test in County Rule 340 § 502.1.

[County Rule 340 §302.3 and SIP Rule 340 §302.3]

- C. Record Keeping:** The Permittee shall keep daily records of the amount and type of asphaltic/bituminous material containing more than 0.5 percent by volume solvent-VOC received and used, as well as the solvent-VOC content of this material. Safety data (MSDS) or technical data sheets shall be kept available.

[County Rule 210 §302.1.c][County Rule 340 §501 and SIP Rule 340 §501]

D. Testing Methods:

If required by the Control Officer the applicable testing procedures contained in County Rule 340 §502 and SIP Rule 340 §502 shall be used to determine compliance with these Permit Conditions.

[County Rule 340 §502 and SIP Rule 340 §502]

- E. Reporting: The Permittee shall file a semiannual compliance report starting from this permit issuance date within 30-days of the end of the 6-month period to the Division with attention to: Large Sources Compliance Supervisor containing the dates and description of any usage of cutback and emulsified asphalt.

[County Rule 210 §302.1.e.(1)] [locally enforceable only]

31. PERMIT CONDITIONS FOR SPRAY COATING OPERATIONS AS SUPPORT ACTIVITIES FOR THIS FACILITY

A. OPERATIONAL LIMITATIONS AND STANDARDS:

- 1) The Permittee shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:
 - a) The Permittee shall operate all spray coating equipment inside an enclosure which has at least three sides a minimum of eight feet in height and able to contain any object(s) being coated.
 - (1) For three-sided enclosures, the Permittee shall direct the spray in a horizontal or downward pointing manner so that overspray is directed at the walls or floor of the enclosure. No spraying shall be conducted within three feet of any open end and/or within two feet of the top of the enclosure.
 - (2) For enclosures with three sides and a roof, or for complete enclosures, the Permittee shall direct the spray into the enclosure so that the overspray is directed away from any opening in the enclosure. No spraying shall be conducted within three feet of any open end and/or within two feet of any open top of the enclosure.
 - b) The Permittee shall install and operate a filtering system on any spray booth or enclosure with forced air exhaust.
 - (1) The filtering system shall have an average overspray removal efficiency of at least 92% by weight for the type of material being sprayed.
 - (2) No gaps, sags or holes shall be present in the filters and all exhaust must be discharged into the atmosphere.
- 2) The Permittee shall be exempt from Condition 25.A.1 above if the spray coating operation is one of the following:
 - a) Spray coating of buildings or dwellings, including appurtenances and any other ornamental objects that are not normally removed prior to coating;
 - b) Spray coating of facility equipment or structures which are fixed in a permanent location and cannot easily be moved into an enclosure or spray booth and which are not normally dismantled or moved prior to coating;
 - c) Spray coating of objects which cannot fit inside of an enclosure with internal dimensions of 10'W x 25'L x 8'H;

[County Rule 315 §301.1]

[County Rule 315 §301.2]

- d) Enclosures and spray booths and exhausts located entirely in a completely enclosed building, providing that any vents or openings do not allow overspray to be emitted into the outside air; or
- e) Coating operations utilizing only hand-held aerosol cans.

[County Rule 315 §302]

B. MONITORING REQUIREMENTS

- 1) The Permittee shall inspect each filter installed on a spray booth or enclosure for gaps, sags, or holes once per week.
 - a) Should the Permittee observe any gaps, sags, or holes in any of the filters, the Permittee shall immediately repair or replace the filter and record the name of the inspector, the location of filtering system containing the filter (if more than one spray booth), and the time and date that the filter was replaced.
 - b) If no gaps, sags, or holes are observed in any of the filters, the Permittee shall record the name of the inspector, the location of the filtering system containing the filter (if more than one spray booth), and the time and date that the filter was inspected.
- 2) The Permittee shall inspect the facility for evidence of any spraying activity that occurred outside of the spray booth once per week.

C. RECORDKEEPING REQUIREMENTS

[County Rule 210 §302.1d]

The Permittee shall maintain on file and make available to the Control Officer upon request a copy of the manufacturer's specifications verifying that the average overspray removal efficiency for the filter is at least 92%.

D. REPORTING CONDITIONS

For the purposes of the semi-annual compliance certification, the Permittee shall provide the following information:

- 1) If the Permittee operates all spray coating equipment inside an enclosure without fixed air exhaust, the Permittee shall provide a statement certifying the following:
 - a) That the enclosure has at least three sides that are a minimum of eight feet in height;
 - b) That no spraying was conducted within three feet of any open end, or within two feet of any open top of the enclosure; and
 - c) That the spray is directed in a horizontal or downward pointing manner for three-sided enclosures, or away from any opening for complete enclosures and three-sided enclosures with roofs.
- 2) If the Permittee operates all spray coating equipment with a filtering system on a spray booth or enclosure with forced air exhaust, the Permittee shall provide a statement certifying the following:
 - a) That each filter installed on a spray booth or enclosure was inspected for gaps, sags, or holes once every two weeks;
 - b) That all filters that were observed to have gaps, sags, or holes were immediately replaced; and
 - c) Details of the make and manufacturer of each filter used as well as the overspray control efficiency.
- 3) The Permittee shall provide a statement certifying that no spraying occurred outside of the paint booths. If evidence of spraying outside of the booth was found, the Permittee shall instead submit a statement detailing any corrective action taken in order to ensure that future spraying occurs inside the spray booth.

APPENDIX A

MAJOR EQUIPMENT LIST

Gila Bend Power Generation Project (Gila Bend)

The facility consists of the following major emitting equipment:

- a. Three General Electric MS7001FA, or equivalent, low NO_x combustion turbines, each with a nameplate rating of 170 megawatts (nominal) and fueled by pipeline quality natural gas only.
- b. Three, 1,000-ton capacity, heat recovery steam generators, each with one low NO_x duct burner with a rating of 375 MMBtu/hr (LHV) to be fueled by pipeline quality natural gas only.
- c. One, 460-MW steam Turbine.
- d. Three Selective Catalytic Reduction (SCR) nitrogen oxides emissions control systems capable of treating the entire exhaust of each combustion turbine and duct burner combined.
 - e. Three catalytic oxidation emissions control systems capable of treating the entire exhaust of each combustion turbine and duct burner combined.
 - f. Three exhaust stacks with heights 165 feet above plant grade and inside diameters of 18 feet.
- g. One, 12-cell, counter-flow, cooling tower, with 12 exhaust stacks with heights 43 feet above plant grade and inside diameters of 30.3 feet and a flowrate of 165,000 gallons per minute total and drift eliminators capable of reducing drift to 0.0005% of flowrate.
- h. One 500-Kilowatt (kW) diesel fuel-fired Emergency Generator, Caterpillar, Model 3412, or equivalent.
- i. One 400-horsepower diesel fuel-fired Emergency Fire Pump, Caterpillar Model 3406, or equivalent.

APPENDIX B

MONITORING NO_x COMPLIANCE BY AMMONIA INJECTION RATE MONITORING

Gila Bend Power Generation Station (GBPGS)

To ensure that the SCR system at the GBPGS facility is properly operated to achieve the design control rate of 2.0 ppm NO_x, the owner/operator shall monitor and achieve a minimum ammonia injection rate for the first two years of commercial operation. Once this two-year period is completed and the final NO_x emission limit is determined, the “minimum ammonia injection rate” requirement shall be no longer be effective. The minimum ammonia injection rate to achieve 2.0 ppm controlled levels shall be calculated as follows:

Step 1 – Calculate the required NO_x Removal:

This calculation uses the actual measured NO_x concentration at the turbine outlet (i.e., before the SCR system) and the target control level of 2.0 ppm to determine the amount of NO_x that must be removed. The actual turbine outlet NO_x concentration is used because the turbine emissions can vary, and so the amount of NO_x that must be removed also varies. From Equation F-5 in 40 CFR 75 (for converting from ppm to lb/MMBTU):

$$\text{NO}_x = [1.194 \times 10^{-7} \text{ (lb/scf)/ppm}] [X - 2.0 \text{ ppm}] [8,710 \text{ scf/MMBTU}] [(20.9\%)/(20.9\% - 15\% \text{O}_2)]$$

where:

X = ppmv NO_x in turbine outlet to SCR

Flue gas is standardized to 15% O₂ for combustion turbine

Simplifying this equation results in:

$$\text{NO}_x \text{ to be removed} = (0.00368 X - 0.00737) \text{ lb/MMBTU NO}_x$$

Step 2 – Calculate the required NH₃ injection rate:

Since 1 mole of NH₃ reacts with one mole of NO, but 2 moles of NH₃ react with one mole of NO₂, the equation uses the relative molecular weights of NH₃ versus NO to calculate the required NH₃ injection rate in units of lb/MMBTU. (Since the ratio of NO₂ to NO is probably less than 0.5, using a molar ratio other than 1.0 would overestimate the minimum required NH₃ injection rate). The minimum rate is, therefore:

$$\text{NH}_3 = [(0.00368 X - 0.00737) \text{ lb/MMBTU NO}_x] (17\text{NH}_3/46 \text{ NO}_x)$$

$$= (0.00136 \times 9 - 0.00272) \text{ lb/MMBTU NH}_3$$

Example

If the measured turbine outlet NO_x at full load without duct burners is equal to the manufacturers guarantee of 9 ppm, then the required NH₃ injection rates is

$$\text{NH}_3 = (0.00136 \times 9) - 0.00272 = 0.00952 \text{ lb/MMBTU}$$

Step 3 –Calculate the ammonia usage and verify compliance with the required NH₃ injection rate:

When the source and type of ammonia is determined (i.e., anhydrous versus aqueous solution at some specified concentration level), the following equation will be used to verify compliance with the required ammonia injection rate:

$$\text{NH}_3 \text{ injected (lb)} = \text{gallons of NH}_3 \text{ solution used (gal)} \times \text{density of liquid (lb/gal)} \times \text{equivalent concentration of NH}_3 \text{ by weight (lb NH}_3\text{/lb solution)}$$

Step 4 – Compliance Averaging Interval

The daily average (i.e., 24-hour block average) turbine outlet NO_x concentration during periods of normal operation above 60% load will be measured and reported. The daily ammonia consumption during the same time periods of normal operations will also be measured and reported. The above equations will be used to demonstrate compliance with the required ammonia injection rate on a daily basis.

APPENDIX C

Technical Support Document

Gila Bend Power Generation Project, Prevention of Significant Deterioration,

Title IV, and Title V Permit Number V00-001

May 9, 2002

I. APPLICANT

Gila Bend Power Partners, L.L.C.
5949 Sherry Lane, Suite 1880
Dallas, Texas 75225

II. PROJECT LOCATION

The Gila Bend Power Generation (GBPG) Project will be located approximately 70 miles southwest of Phoenix in the town of Gila Bend, Arizona. The general coordinates of the plant will be 32° 58' 30" N latitude and 112° 49' 15" W longitude. The site is located north of Interstate 8 and just south of West Sisson Road. The facility's address will be 35400 West Sisson Road, Gila Bend, Arizona 85337.

The GBPG Project is a proposed new natural gas-fired combined cycle merchant power plant with three combustion turbine units, each rated at a maximum of 170 megawatts (MW) electrical power (nominal) and one steam turbine. The facility will be capable of generating a total of 845 MW power. Only natural gas fuel will be used for the combined cycle systems. The facility will be owned and operated by Gila Bend Power Partners, L.L.C. ("GBPP"). The project is classified as Standard Industrial Classification (SIC Code) 4911 and North American Industrial Classification System (NAICS) 221112, Fossil-Fuel Electric Power Generation.

With respect to the National Ambient Air Quality Standards (NAAQS), portions of Maricopa County are designated as serious nonattainment for particulate matter less than or equal to 10 microns in diameter (PM₁₀), carbon monoxide (CO), and ozone. (Since the 182[f] waiver is not implemented in Maricopa County for New Source Review purposes, both of the precursor pollutants, oxides of nitrogen [NO_x] and volatile organic compounds [VOCs] are regulated by the County for ozone NAAQS purposes.) The County is designated as attainment/unclassified for sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and lead. The proposed location of the facility is 70 miles southwest of Phoenix is in an attainment area for all criteria pollutants.

The Maricopa County Environmental Services Department (MCESD) has been delegated primary responsibility for the Prevention of Significant Deterioration (PSD) program in the County and, therefore, the project falls under the jurisdiction of MCESD. Since GBPG is a major source in an attainment area, it is subject to PSD, Title IV, and Title V regulatory programs.

III. PROJECT DESCRIPTION

GBPG initially filed a combined PSD, Title IV, and Title V Air Quality Permit Application for the project in March 2000, followed by six application addenda to address review comments on the original application, incorporate equipment changes, and revise emission rates. The application was submitted pursuant to MCESD Rules 200, 210, and 240.

The major GBPG components with the potential for air quality emissions are listed in Table 3-1. The GBPG Project will include three General Electric MS7001FA or equivalent, natural gas-fired combustion turbines operating in combined-cycle mode with three supplementary fired, Heat Recovery Steam Generators (HRSGs), and one steam turbine. Steam generation in each of the HRSGs will be augmented with a supplementary natural gas-fired duct burner. Each HRSG will also be outfitted with a Selective Catalytic Reduction (SCR) system to reduce the NO_x emissions by approximately 78% and an Oxidation catalyst system to reduce CO emissions by approximately 67 percent.

Table 3-1. GBPG Major Emitting Equipment

Three Combined Cycle Combustion Turbines/HRSG units and one Steam Turbine and electrical generator	
The power equipment will include:	
a.	General Electric MS7001FA combustion turbines (CTGs) or equivalent operating in combined-cycle mode with a nominal rating of 170 MW electric power per CTG, with one CTG/HRSG train for one steam turbine. The power block consisting of one CTG/HRSG train and one steam turbine will generate 282 MW, with a total of 845 MW for the three power blocks. The CTGs are fueled by pipeline quality natural gas only.
b.	Supplementary fired, HRSG with duct burners. The duct burners have a rating of 375 MMBtu/hr (HHV) and are fueled by pipeline quality natural gas only.
c.	Three SCR NO _x emissions control systems capable of treating the entire exhaust of the CTGs and duct burners combined.
d.	Three Oxidation catalyst CO control systems capable of treating the entire exhaust of the CTGs and duct burners combined.
e.	A Continuous Emission Monitoring System (CEMS) that records at least NO _x , CO, and oxygen (O ₂) content of the System exhaust.
f.	An exhaust stack with height 165 feet above plant grade and inside diameter of 18 feet (per CTG/HRSG train).
One Wet Cooling Tower consisting of:	
a.	Twelve-cells, with a total of 165,000 gallons per minute total water recirculation rate for the cooling tower and height 43 feet above plant grade.
b.	Continuous cooling water conductivity monitoring system.
Emergency Diesel Engines	
a.	One 400 horsepower diesel-fueled engine to drive an emergency fire water pump.
b.	One 500 kilowatt diesel-fueled engine to drive an emergency generator.

For some emission calculations and permit limits involving emissions in terms of heat input rate (e.g., pounds per million Btu), the heat input rate in terms of

million Btu per hour (MMBtu/hr) is required. The heat input rate is a function of the heat content of the fuel (e.g., higher heating value or lower heating value, and the temperature and load conditions, among other variables). For purposes of assessing emissions in terms of MMBtu, a lower heating value (LHV) of 20,548 Btu per pound of natural gas has been provided by the applicant, based on a natural gas fuel analysis. Using this heating value and the amount of natural gas that will be combusted in the Combustion Turbines during 100% load and 27 degrees Fahrenheit (°F), the Combustion Turbines will each combust approximately 1,654 MMBtu/hr at full load. Likewise, at full load the duct burners will combust approximately 375 MMBtu/hr.

IV. EMISSIONS FROM THE PROJECT

Tables 4-1 through 4-4 display the proposed maximum permit limits (potential to emit [PTE]) with pollution controls from the GBPG systems for the criteria pollutants (except for the SCR, which does not operate during periods of start-up). The emission estimates shown in the tables are based on emission rates derived by GBPP utility engineers and consultants using information provided by manufacturers and information from other projects and a Best Available Control Technology (BACT) analysis. The annual emission rates shown in Table 4-1 include up to 600 hours per year of operation for each Combined Cycle System in start-up mode. The emissions from the diesel back-up generator and fire pump were estimated based on 500 hours/year of operation (per unit).

The hourly emission rates listed in Table 4-2 are the maximum emission rates under any combination of full load and ambient temperature conditions. The emission rates listed in Table 4-3 reflect emissions during start-up, provided by the applicant based on the information supplied by the equipment manufacturer. If no limit is included in Table 4-3 for a given pollutant, the emissions from normal operation in Table 4-2 apply during start-up. Table 4-4 shows additional specific limits that affect emissions. As shown in the tables, the fuel sulfur content is limited to 0.0075 grains per dry standard cubic foot for natural gas and 0.05 % by weight for diesel fuel. Cooling Tower Total Dissolved Solids (TDS) are limited to 10,000 parts per million by weight (ppmw) (ppmw approximately equal to milligrams per liter [mg/l]).

The emission limits for NO_x and CO are 3-hour rolling averages calculated from CEMS. The averaging times for PM₁₀ and VOC are consistent with the stack emissions testing methods (three 1-hour averages). The ammonia injection rate is a 24-hour rolling average calculated from CEMS. SO₂ emissions are determined from fuel sulfur monitoring, normally conducted quarterly, but more frequently as required by the Permit.

Table 4-1. Rolling 12-month Average Limits

Device	Rolling 12-month Average Emission Limits (tons per year)				
	SO₂	NO_x	CO	PM₁₀	VOC
Turbine and Duct Burner-1	21.0	90.2	88.0	114.0	40.5
Turbine and Duct Burner-2	21.0	90.2	88.0	114.0	40.5
Turbine and Duct Burner-3	21.0	90.2	88.0	114.0	40.5
Cooling Tower	NA	NA	NA	9.05	NA
Diesel Generator	0.06	3.9	1.05	0.12	0.11
Diesel Fire Pump	0.21	3.1	0.67	0.22	0.25
Total for the facility	63.3	277.60	265.7	351.4	121.9

Table 4-2. Hourly Emission Limits During Periods When a Combined Cycle System Operates in Conditions Other Than Start-up, in Pounds per hour

Device	SO₂	NO_x	CO	PM₁₀	VOC
Turbine and Duct Burner-1	4.8	20.6	20.1	26.02	9.2
Turbine and Duct Burner-2	4.8	20.6	20.1	26.02	9.2
Turbine and Duct Burner-3	4.8	20.6	20.1	26.02	9.2
Turbine Only, CT-1	3.9	16.8	16.36	21.15	3.0
Turbine Only, CT-2	3.9	16.8	16.36	21.15	3.0
Turbine Only, CT-3	3.9	16.8	16.36	21.15	3.0

**Table 4-3. Hourly Emission Limits for a Single Combined Cycle System
During Periods of Start-up, in Pounds per hour**

Device	NO_x	CO	VOC
Turbine Only Startup CT-1	102.5	594.0	40.0
Turbine Only Startup CT-2	102.5	594.0	40.0
Turbine Only Startup CT-3	102.5	594.0	40.0

Table 4-4. Additional Concentration or Rate Emission Limits

Device	NO_x	CO	PM₁₀ Total (Filterable plus Condensable)	SO₂	VOC	Other	Reference
Each Combustion Turbine When Operating in Other than Startup Mode	2.5 ppmvd 3-hour rolling average	4.0 ppmvd 3-hour rolling average	21.15 lb/hour and 0.02 lb/MMbtu (HHV)	3.9 lb/hour and 0.0021 lb/MMBTU 3-hour average	1.4 ppmvd 3-hour rolling average	Ammonia 10-ppmvd 24-hour rolling average	BACT
Each Combustion Turbine and Duct Burner	2.5 ppmvd 3-hour rolling average	4.0 ppmvd 3-hour rolling average	26.02 lb/hour and 0.014 lb/MMbtu (HHV), 3-hour rolling average	4.8 lb/hour and 0.0021 lb/MMBTU 3-hour average	3.6 ppmvd 3-hour rolling average	Ammonia 10-ppmvd 24-hour rolling average	BACT
Cooling Towers	NA	NA	Drift eliminators capable of limiting drift to 0.0005% of cooling water flow, and Total Dissolved Solids Content of Water 10,000 ppm	NA	NA	NA	BACT

Device	NO _x	CO	PM ₁₀ Total (Filterable plus Condensable)	SO ₂	VOC	Other	Reference
Natural Gas Fuel Sulfur Content	NA	NA	NA	NA	NA	Sulfur Content 0.0075 grains per dry standard cubic foot	BACT
Diesel Fuel Sulfur Content	NA	NA	NA	NA	NA	Sulfur Content 0.05% by weight	BACT

V. APPLICABILITY OF NEW SOURCE REVIEW

Since GBPG is located outside of the designated County nonattainment area, it is reviewed only as a PSD source, not as a nonattainment source. However, County Rule 240 also requires an analysis of the impacts of the source on the ozone nonattainment area. (This is discussed in Section IX, following).

Since GBPG is a steam electric generating station, it is one of the 28 major source categories for which the PSD threshold is 100 tons per year (TPY) PTE. As shown in Table 5-1, for GBPG, this threshold is exceeded for NO_x, CO, and PM₁₀.

Table 5-1. Determination of Major Source and PSD Applicability

Pollutant	Annual Emissions (TPY)	Major Source Threshold (TPY)	Major Source?	Significance Level (TPY)	PSD Applicable ?
NO _x	277.60	100	Yes	40	Yes
CO	265.7	100	Yes	100	Yes
SO ₂	63.3	100	No	40	No
PM ₁₀	351.4	100	Yes	15	Yes
VOC	121.9	100	Yes	40	Yes

PSD New Source Review requires an analysis of BACT for those pollutants that exceed the applicable PSD trigger levels; an ambient air quality impacts analysis for increment consumption and NAAQS for all criteria pollutants (whether or not they exceed thresholds); a visibility and other air quality related values (AQRVs) impact analysis for all criteria pollutants that could affect Class I Areas; and an “additional impacts analysis”, including visibility, for non-Class I areas. MCESD rules also require an analysis of the impact of GBPG on ozone concentrations in the nonattainment area. In addition to the PSD review for criteria pollutants, MCESD policy requests an air toxics ambient impact evaluation for those chemicals listed by the Arizona Department of Environmental Quality (ADEQ) under its draft Ambient Air Quality Guidelines (AAQGs) policy. Each of these elements will be discussed in the following sections.

VI. BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

A “top down” analytical procedure is required to establish an emission limit that represents the most stringent control technique available, taking cost and other environmental factors into account. The procedure includes the following elements:

- Identify all available control options with practical potential for application to the specific emission unit for the regulated pollutant under evaluation;
- Eliminate the technically infeasible or unavailable technology options;
- Rank the remaining control technologies by control effectiveness (cost and emissions reductions); and
- Evaluate the most effective controls and select the most stringent technique based on energy, environmental, and economic impacts.

GBPG provided a detailed BACT analysis of the emitting units. MCESD and its outside consultant, URS Corporation reviewed that analysis, and the results are summarized in the following subsections. The diesel-fired engines will be operated only for emergency situations. Therefore, good combustion control of modern engines was determined as BACT for the firewater pump engine and the emergency generator.

A. NO_x from the Combined Cycle Systems

In the Combined Cycle Systems, NO_x is emitted from the combustion turbine and duct burners. GBPG proposed an SCR system coupled with a low-NO_x combustor and an after-control emission limit of 2.0 parts per million by volume dry corrected to 15% O₂ (2.5 ppmvd) on a rolling 3-hour average.

Emission reduction options evaluated were: Xonon™, combination of SCONO_x™ and Dry Low NO_x combustors (DLN), and combination of DLN and SCR.

Xonon™ is an emerging flameless catalytic system that limits the temperature in the combustor below the NO_x formation threshold. Company literature indicates the Xonon™ system has only been used for small turbines (less than 10 MW). It has not been tested for large turbines similar to those proposed by GBPG. GBPG reports that the Xonon™ manufacturer (Catalytica) indicates that the system is not yet available for installation in large industrial gas turbines such as the GE Frame 7FA. For this reason the Xonon™ system is considered technically infeasible.

SCONO_x™ technology operates at a temperature range of 300 to 700°F. It utilizes a single catalyst system to control both CO and NO_x. CO is oxidized to carbon dioxide while NO_x is converted to NO₂, which is adsorbed onto the surface of the catalyst. Unlike SCR, the SCONO_x™ system does not require ammonia (NH₃); instead, the catalyst uses a dilute hydrogen reducing gas in the absence of O₂ for regenerating the catalyst. The SCONO_x™ catalysts need to be washed once every 6 to 12 months, which can cause system downtime unless additional catalysts are purchased. This new technology has only been demonstrated for medium-size turbines. The system has not been tested on large turbines (such as those proposed by GBPG) at this time. However,

SCONO_xTM has been considered a feasible technology by some agencies and was further evaluated by GBPG.

GBPG reports that SCONO_xTM with DLN can achieve NO_x emissions at 2 ppmvd corrected to 15% O₂. Using SCONO_xTM technology causes an energy penalty due to the increased back-pressure on the turbine that increases the heat rate and reduces the turbine peak power output. GBPG's cost analysis shows that the SCONO_xTM effective annual cost is \$148,288 per ton of NO_x removed compared to the control technology chosen by GBPG, DLN, and SCR control to 2.5 ppmvd NO_x.

SCR is a post-combustion NO_x control method. In this process, a reducing agent is introduced into the flue gas, upstream of a catalyst bed, which is maintained at elevated temperature. With ammonia as the reducing agent, the thermal de-NO_x process can reduce over 70% of NO_x emissions. SCR has the same energy penalties as SCONO_xTM. SCR has a potential environmental impact in the form of ammonia emissions. The SCR catalyst may also have to be disposed of as hazardous waste. GBPG originally evaluated SCR based on assuming that it would achieve NO_x emissions of 2.5 ppmvd (3-hr avg.) corrected to 15% oxygen (approximately, 78% control).

Based on economic, energy, and environmental impacts analyses of the control strategies listed above, SCR and DLN, which limit NO_x emissions (non-startup) from the gas turbines to 2.5 ppmvd (3-hr avg.) at 15% O₂ (78% control), were originally determined to be BACT for GBPG. This control level includes the emissions from the duct burner contribution, which were guaranteed by the duct burner manufacturer at 0.08 lb NO_x/MMBtu (uncontrolled).

However, based on subsequent discussions with EPA Region 9 regarding NO_x BACT emission limits for gas-turbine combined cycle powerplants, GBPG has agreed to install an SCR control system designed to achieve a NO_x control level of 2.0 ppm (1-hr avg). The permit conditions were also modified to limit NO_x emissions to 2.5 ppm (1-hr avg) for the first two years of operation. After the first two years of operation the NO_x emission limit will be lowered to 2.0 ppm (1-hr avg) unless the applicant can provide sufficient justification to the Maricopa County Air Pollution Control Officer and to the EPA Administrator that this limit cannot be met. If the Control Officer and Administrator agree that the 2.0 ppm NO_x limit cannot be met, then they may set a higher NO_x limit that they believe the Permittee can consistently and reasonably meet based upon their evaluation of the demonstration report submitted by the Permittee. However, the new NO_x limit cannot exceed 2.5 ppm (1-hr avg), excluding startup and shutdown periods.

B. CO from the Combined Cycle Systems

In the Combined Cycle Systems, CO is emitted from the combustion turbine and duct burners. GBPG proposed an Oxidation catalyst unit with a CO reduction efficiency of 67 percent. The control technologies identified by GBPG for controlling CO emissions from the turbines and duct burners were the following: SCONO_xTM, Oxidation catalyst, and combustion control.

Operation of the SCONO_xTM system, including associated energy impacts, is the same as described above for NO_x. There is no level of CO control established for

the large turbines associated with this project using SCONO_xTM. Because the application of SCONO_xTM was not considered feasible for NO_x, GBPG did not further consider this technology for CO control.

CO catalytic control is a post-combustion control system used to oxidize CO to carbon dioxide. Under maximum load conditions, GBPG's Oxidation catalyst will achieve a 4 ppmvd CO emission level (corrected to 15% O₂). Using CO catalyst technology causes an energy penalty due to the increased back-pressure on the turbine that increases the heat input required and reduces the turbine peak power output. However, the back-pressure (and thus energy penalty) is expected to be smaller than that associated with SCONO_xTM.

A potential environmental impact of using CO catalyst is an increase in sulfuric acid mist emissions, which are converted from SO₂. However, the additional sulfuric acid mist emissions are expected to be minor due to the low SO₂ emissions. The CO catalyst may also have to be disposed of as hazardous waste. The effective annual cost estimated by GBPG for using CO catalyst is \$9,638 per ton of CO removed.

Combustion controls are controls integrated into the combustion system design to minimize CO emissions. This method also incorporates implementing proper combustion techniques to minimize CO emissions. There are no environmental or energy impacts associated with combustion controls.

GBPG's turbine CO concentration is 4.0 ppmvd at 15% O₂, 3-hour rolling average. This is more stringent than typical BACT limits of 20 ppm, 3-hour rolling average, which have been approved recently for similar facilities. Thus, use of Oxidation catalyst will meet BACT for the Combined Cycle Systems.

C. PM₁₀ from the Combined Cycle Systems

PM₁₀ emissions from natural gas-fired Combined Cycle Systems are relatively small. In addition, no post-combustion control systems have been installed to control PM₁₀ from natural gas-fired units. Therefore, low sulfur fuel and good combustion control is considered BACT for PM₁₀ from the Combined Cycle Systems. GBPG proposed combustion of pipeline quality natural gas and efficient combustion as BACT for PM and PM₁₀ emissions. Use of pipeline quality natural gas fuel was determined to be BACT for the turbines and duct burners. This decision is consistent with other BACT determinations listed in the Regional BACT/LAER Clearinghouse.

The PM/PM₁₀ emissions were based on an emission rate 26.02 pounds per hour (lb/hr) per turbine/HRSG unit. This emission level is based on a turbine contribution of 21.15 lb/hr (per unit, which includes condensible PM) and a duct burner contribution of 4.87 lb/hr per unit, which is based on a duct burner PM/PM₁₀ emission factor of 0.013 lb/MMBtu.

D. PM₁₀ from the Cooling Tower

There is a potential for PM₁₀ formation from the solids that remain upon evaporation of water droplets emitted from the cooling tower in the form of drift.

There are two primary factors that control the amount of PM₁₀ from the cooling tower: maximum TDS in the cooling tower water and droplet drift rate.

A droplet drift rate of 0.0005% resulting from installation of drift eliminators on the cooling tower was concluded as BACT. This limit can be compared to U.S. Environmental Protection Agency (EPA) assumed drift rates (in AP-42) of 0.02 percent.

The second parameter affecting PM₁₀ from the cooling towers is TDS loading limits. The TDS is limited to 10,000 ppm (weight). TDS is required to be monitored on an essentially continuous basis (through conductivity measurements) with monthly TDS laboratory analysis.

GBPG will use of drift eliminators that will limit the drift rate to 0.0005% of the cooling tower water flow and a water TDS concentration of 10,000 ppmw is considered to be BACT.

E. VOC from the Combined Cycle Systems

The Oxidation catalyst system used to control CO emissions will also reduce VOC emissions. The permitted VOC limits are 1.4 ppmvd corrected to 15% oxygen for each combustion turbine operating in other than startup mode, and 3.6 ppmvd corrected to 15% oxygen for the combustion turbine/HRSG units during normal operations with the duct burners firing.

The control technologies identified by the GBPG for controlling VOC emissions from the turbines and duct burners are Oxidation catalyst, and good combustion practices/design. Good combustion practices include proper air-to-fuel ratio and design that adequately account for time, temperature, and turbulence conditions within the combustion zone.

VOC Oxidation catalyst control uses the same catalyst as used for CO control. For cost analysis purposes, GBPG assumed a 50% VOC reduction efficiency. Using VOC catalyst technology causes the same energy and environmental impacts as detailed above for CO catalyst control. GBPG assessed the annual energy impact at \$53,286. The effective annual cost estimated by GBPG for using Oxidation catalyst is \$142,238 per ton of VOC removed versus using combustion controls. However, as described earlier, this system also achieves CO removal.

Combustion controls are integrated into the combustion system design to minimize VOC emissions. This method also incorporates implementing proper combustion techniques to minimize VOC emissions.

Based on the economic, energy, and environmental impacts analyses of the control strategies listed above, good combustion practices were proposed to meet BACT. (Note: GBPG will install Oxidation catalyst to reduce CO emissions. This oxidation catalyst system will result in VOC emission reductions. The applicant has not been able to secure a percent VOC reduction from the Oxidation catalyst manufacturer).

F. SO₂ Emissions from the Combined Cycle Systems

The control technologies identified by GBPG for controlling SO₂ from the turbines and duct burners are flue gas desulfurization (FGD) and use of fuel with a low sulfur content.

GBPG determined that FGD is not technically feasible because there are no known FGD systems on combustion turbines. Use of low sulfur fuel, such as pipeline quality natural gas, will inherently result in low SO₂ emissions.

Thus, use of pipeline quality natural gas fuel with low sulfur content was determined to be BACT for the turbines and duct burners. This decision is consistent with other BACT determinations listed in the Regional BACT/LAER Clearinghouse. The SO₂ emissions were based on a sulfur content of 0.0075 grains per standard cubic foot, and the corresponding SO₂ emission rate is 4.8 lb/hr from each turbine and 0.9 lb/hr from each duct burner unit.

G. PM₁₀ and SO₂ from the Diesel-Fueled Engines

To aid in particulate and SO₂ control from the diesel-fueled engines, sulfur content in the diesel fuel will be limited to 0.05% by weight and verified by the fuel supplier.

H. Additional Pollutants

As part of the BACT analysis, pollutants in addition to the criteria pollutants were examined. In none of the BACT decision cases were non-criteria pollutant emissions relevant for the BACT decision except for the SCR systems, which uses ammonia to control NO_x emissions. Some of the ammonia used in the SCR systems will be emitted unreacted from the system. This is termed ammonia slip. The unreacted ammonia in the SCR exhaust has the potential to react downstream of the SCR or in the atmosphere with SO₂ in the exhaust to create additional particulate. In addition, unreacted ammonia in the atmosphere has the potential to cause direct health effects (which are evaluated in Arizona through the AAQG program).

Ammonia slip is permitted at a maximum of 10 ppm in the exhaust, corrected to 15% oxygen. This level will be confirmed through required annual stack testing and a requirement that whenever the ammonia injection rate associated with 10-ppm ammonia slip is exceeded, additional stack testing to confirm that the 10-ppm limit is still being met is required.

The 10-ppm ammonia slip level is consistent with the best operating systems. In addition, since the amount of sulfur in the pipeline quality natural gas is relatively low and since only natural gas fuel is used, resultant PM₁₀ emissions from ammonia reacting with the SO₂ will be relatively low. The AAQG analysis showed that ambient ammonia concentrations would be less than 6% and 1.5% of the 1-hour and 24-hour AAQGs, respectively.

Since there is no CEMS for ammonia, the ammonia slip limit will be met by establishing an ammonia injection rate, above which source testing will be required to confirm that the ammonia slip limit is being met.

The ammonia injection rate associated with a 10 ppm ammonia slip limit can be calculated by determining the amount of ammonia necessary to react with the amount of NO_x produced in the duct burners and combustion turbine, assuming a molar ratio for the reaction of NO_x and NH₃, and adding the equivalent mass of NH₃ corresponding to 10 ppmv (corrected to 15% O₂). At maximum combustion of the combustion turbines and duct burners combined during non-startup conditions, prior to being controlled by the SCR, each Combined Cycle System will generate 94.3 lb/hr of NO_x (as NO₂).

NO_x emissions from natural gas combustion normally consist mostly (i.e., 95%) of NO versus NO₂. However, it is anticipated that emissions from the DLN combustion turbines will have a larger percentage of NO₂ because of the reduced flame temperature, reduced residence time, and lean fuel mixture. The percentage of NO may be as low as 10% (with NO₂ being 90%). The stoichiometry for the reaction of ammonia with NO is different than with NO₂, being one mole of NH₃ for one mole of NO, but two moles of NH₃ for one mole of NO₂. Therefore, the amount of ammonia needed for reaction is a function of the amount of NO versus NO₂.

In order to account for the uncertainty in the relative percentage of NO and NO₂, the permit contains a formula that depends upon the molar ratio of NH₃ to NO_x. An initial default ratio of 1.50 is assumed (corresponding to 50% NO and 50% NO₂ in the exhaust), but with adjustments to the ratio determined by actual stack emissions or other emissions data from the Combined Cycle Systems.

VII. CRITERIA POLLUTANT AIR QUALITY IMPACTS IN ATTAINMENT AREAS

A. Introduction

The proposed GBPG site will be located approximately 70 miles southwest of Phoenix in the town of Gila Bend, Arizona. This area is currently classified by the EPA as attainment for all criteria pollutants. There are no Federal Class I areas within 100 kilometers (km) of the facility.

An air quality impact analysis for major sources subject to PSD review typically involves two distinct phases: (1) a preliminary analysis, and (2) a full impact analysis. The objective of the preliminary analysis is to assess whether predicted impacts associated with a project are expected to be "significant." Predicted impacts are considered significant with respect to PSD if they equal or exceed the significance levels defined in the PSD regulations (see Table 7-1). If no significant ambient impacts are predicted for a particular pollutant, the full impact analysis for that pollutant is not required, since the source would not cause or contribute to a violation of an NAAQS (40 CFR 51.165(b)(2)).

If significant ambient impacts are predicted, then a full impact analysis is required for that pollutant. This requires conducting an NAAQS analysis for the pollutant, in which other emission sources in the area are modeled, and conducting a PSD increment analysis for the pollutant, which incorporates emissions from other increment-consuming sources in the area. Table 7-1 summarizes the PSD regulations for criteria pollutants.

Table 7-1. PSD Regulations for Criteria Pollutants

Pollutant	Averaging Period	Class II Significance Level ($\mu\text{g}/\text{m}^3$)	Class II PSD Increment ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	Monitoring Exception Level ($\mu\text{g}/\text{m}^3$)
NO _x	Annual	1	-	-	-
NO ₂	Annual	-	25	100	14
PM ₁₀	Annual	1	17	50	NA
	24-hour	5	30	150	10
SO ₂	Annual	1	20	80	NA
	3-hour	25	512	1,300	NA
	24-hour	5	91	365	13
CO	1-hour	2,000	NA	40,000	NA
	8-hour	500	NA	10,000	575

Notes:

$\mu\text{g}/\text{m}^3$ = Micrograms per cubic meter PM₁₀ = Particulate matter less than or equal to 10 microns

CO = Carbon monoxide PSD = Prevention of Significant Deterioration

NA = Not applicable SO₂ = Sulfur dioxide

NO₂ = Nitrogen dioxide NO_x = Nitrogen oxides

B. Meteorological Data

The meteorological data used in the air quality analysis consist of surface data collected at the Gila Bend Municipal Airport from 1994 to 1995, and upper air data (mixing height data) collected at the National Weather Service Station in Tucson, Arizona from 1994 to 1995. The Gila Bend Municipal Airport is located approximately 7.8 miles east to the project site. According to the project applicant, use of these meteorological data for the proposed project has been approved by the Department and EPA Region IX (GBPP, 2001).

C. GEP and Building Downwash Analysis

The EPA BPIP model was employed to generate building downwash data as input to the EPA ISCST3 model. These data consist of building heights and projected building widths. When an emission source height is less than the Good Engineering Practice (GEP) stack height and the source is located within a region of building influence, these direction-specific building dimensions are included in the ISCST3 modeling analysis for calculating wake and downwash concentrations. The proposed stack heights are below GEP stack heights; therefore, the analysis of building downwash and wake effects was conducted.

D. Model Selection and Modeling Options

A preliminary analysis was conducted in accordance with the approved modeling protocol. The EPA ISCST3 model (Version 00101) was used with regulatory default parameters and an option of processing missing meteorological data (MSGPRO option in ISCST3). The land within 3 km in all directions of the proposed project site is predominantly rural; therefore, rural dispersion coefficients were used in the modeling.

E. Receptor Network

A significant portion of the receptors modeled for the project can be classified as complex terrain. In general, complex terrain is considered to be terrain exceeding release height elevations of the sources being modeled. Terrain elevations were derived from 7.5-minute United States Geological Survey (USGS) digital elevation models (DEMs) for Gila Bend, Smurr, Theba, Cotton Center, Citrus Valley East, Citrus Valley West, Black Gap, Blue Plateau, Bosque, Cotton Center Northwest, Cotton Center Southeast, Dendora Valley, Margies Peak, Quail Spring Wash, Sentinel Northeast, Sentinel Southeast, South of Gila Bend, South of Theba, Spring Mountain, and Woolsey Peak, Arizona.

Coarse and fine Cartesian receptor grids were used in the modeling analysis. Initial air dispersion modeling runs were performed using a coarse receptor grid. This coarse grid extends out 20 km in each direction from the proposed site with receptor spacing of 1 km. A fine receptor grid was also developed after the initial modeling analysis, extended out 3 km in each direction from the project site with receptor spacing of 100 meters. The second fine grid (minigrid) extended out 1 km in each direction from the point of the maximum impacts with receptors spacing of 100 meters. Discrete receptors were placed along the facility's fenceline using 50-meter spacing. Discrete receptors were placed on the four nearby Class II wilderness areas: Signal Mountain Wilderness; Woolsey Peak Wilderness; North Maricopa Mountains Wilderness; and South Maricopa Mountains Wilderness.

F. Source Data

The proposed GBPG sources will consist of three, combined cycle combustion turbine generators, three heat recovery steam generators with duct burners, one steam turbine, and one cooling tower. The combustion turbine generators and the duct burners will be fired exclusively with natural gas. Other emission sources planned for use at the facility include one emergency diesel generator and one diesel fire pump. The emergency diesel generator and diesel fire pump were not included in the modeling analysis, since they will be used on a limited basis in emergency situations. The stack parameters and emission rates modeled represent conservative, worst case values, considering all proposed operating load conditions. The stack parameters and emission rates for the worst case condition are based on turbine performance values for different ambient air temperatures. The modeling analysis used the maximum emission rate and the lowest exhaust flow rate for each load condition and range of operating temperatures. The stack parameters and source emission rates used in the modeling analysis are presented in Tables 7-2 and 7-3, respectively.

Table 7-2. Stack Parameters Used in the Modeling Analysis

Stack Parameters	Combustion Turbine (3 Units)	Cooling Tower (1 Unit, 12 cells)
Stack Height (ft)	165	43
Stack Diameter (ft)	18	30
Temperature (°F)	180	70
Exit Velocity (ft/s)	56.7	30

Table 7-3. Source Emissions Rates (lb/hour) Used in the Modeling Analysis

Pollutant	Combustion Turbine (3 Units)	Cooling Tower (1 Units, 12 cells)
CO	20.1	NA
NO _x	20.6	NA
SO ₂	4.8	NA
PM ₁₀	26.02	2.07

Notes:NO_x = Nitrogen oxides

CO = Carbon monoxide

NA = Not applicable

PM₁₀ = Particulate matter less than or equal to 10 micronsSO₂ = Sulfur dioxide**G. Modeling Results**

Table 7-4 presents a summary of the predicted maximum criteria pollutants' concentrations associated with the proposed project in the preliminary analysis. The maximum predicted concentrations for all the criteria pollutants are below the corresponding PSD Class II significance levels. The maximum concentrations for all the criteria pollutants, except CO, occurred within 1.2 kilometers of the proposed project site. Maximum predicted CO impacts were found within 10 km of the project site. A full impact analysis was not performed, since the predicted maximum criteria pollutants' concentrations in the preliminary analysis do not exceed the PSD significance levels.

Table 7-4. Maximum Impacts Compared with the PSD Significance Levels

Pollutant	Averaging Period	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Class II Significance Level ($\mu\text{g}/\text{m}^3$)
NO _x	Annual	0.23	1
PM ₁₀	Annual	0.33	1
	24-hour	2.79	5
SO ₂	Annual	0.053	1
	3-hour	1.80	25
	24-hour	0.44	5
CO	1-hour	12.38	2000
	8-hour	5.49	500

Notes:

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

NO₂ = Nitrogen oxides

CO = Carbon monoxide

SO₂ = Sulfur dioxide

PM₁₀ = Particulate matter less than or equal to 10 microns

VIII. AIR TOXICS IMPACT ANALYSIS

The potential of the facility to cause exceedances of the Arizona AAQGs was evaluated by determining AAQG compound emissions and inputting the emission rates into the worst case ambient impact scenario. The modeled impacts were compared to the most recent version (1999) of the annual and short-term (1-hour and 24-hour) AAQGs. The model results for the air toxics are shown in Tables 8-1. None of the AAQGs are exceeded.

Table 8-1. AAQG Analysis for GBPG

HAPs	Emission (TPY)	g/sec	1-hour Impact (ug/m3)	24-hour Impact (ug/m3)	Annual Impact (ug/m3)	1-hour AAAQG (ug/m3)	24-hour AAAQG (ug/m3)	Annual AAAQG (ug/m3)
1-3 Butadiene	0.001	1.63014E-05	0.000	0.000	0.000	5.00	1.30	0.00
Acetaldehyde	0.243	0.007	0.0342	0.0051	0.0006	630.00	170.00	0.45
Acrolein	0.050	0.001438356	0.0070	0.0010	0.0001	6.30	2.00	NA
Ammonia	92.28	2.65	12.97	1.93	0.23	230	140	NA
Benzene	0.047	0.001342466	0.0066	0.0010	0.0001	170.00	44.00	0.12
Ethylbenzene	0.043	0.001246575	0.0061	0.0009	0.0001	4,500.00	3,500.00	NA
Formaldehyde	0.600	0.017260274	0.0844	0.0125	0.0015	20.00	12.00	0.08
Hexane	1.800	0.051780822	0.2531	0.0376	0.0045	5,400.00	1,400.00	NA
Naphthalene	0.005	0.000143836	0.0007	0.0001	0.0000	630.00	400.00	NA
Phenanthrene	0.001	3.06849E-05	0.0001	0.0000	0.0000	NA	NA	NA
Propylene	2.600	0.074794521	0.3656	0.0543	0.0065	NA	NA	NA
Propylene Oxide	0.200	0.005753425	0.0281	0.0042	0.0005	370.00	98.00	0.27
Toluene	0.267	0.007671233	0.0375	0.0056	0.0007	4,400.00	3,000.00	NA
Xylenes	0.100	0.002876712	0.0141	0.0021	0.0003	5,400.00	3,500.00	NA
Lead	0.231	0.006645205	0.0325	0.0048	0.0006	1.50	1.50	1.50

IX. URBAN AIRSHED MODELING

MCESD Rule 240.308.1(e)(2) states that any major source of NO_x or VOCs located within 50 km of the nonattainment area boundary shall be presumed to contribute to violations of the ozone standard in the nonattainment area unless it can be shown because of physical terrain, meteorology, or other physical factors the source is not expected to contribute to violations.

The ADEQ contracted with Sonoma Technology, Inc. to perform an analysis of the impact of emissions from GBPG and four other proposed power plants on the Maricopa County Ozone Nonattainment Area (The Impact of Five Proposed Power Plants on UAM-IV Predicted Ozone Concentrations in the Maricopa County Ozone Nonattainment Area, Report STI-900830-2010-FR, Sonoma Technology, Inc., September 2000). The report concludes that the differences in predicted peak ozone concentrations with and without the impact of the power plants are less than 0.15%, and are not considered to be significant. There were also no areas (surface grid cells) where ozone concentrations were less than the NAAQS of 0.12 ppm that were predicted to exceed 0.12 ppm when the power plant contributions were included in the analysis. Therefore, the ADEQ analysis demonstrates that GBPG would not cause any new exceedances of the ozone 1-hour standard or exacerbations of existing exceedances of this standard.

X. ADDITIONAL IMPACT ANALYSIS

A. Visibility Impacts

The PSD regulations require that PSD permit applications address the potential impairment to visibility in Class I areas. Class I areas are national or regional areas of special natural, scenic, recreational, or historic value for which the PSD regulations provide special protection. The nearest Class I area to GBPG is the Superstition Wilderness Area about 120 km (75 miles) east of the site. The Superstition Wilderness Area is so distant that visibility impacts from GBPG are not likely.

However there are an additional four Class II Wilderness areas within 50 km of the site. Although not required by PSD regulations, GBPG analyzed the potential visibility impacts on the four nearby Class II areas at the request of the Federal Land Manager (FLM), Mr. Peter Lahm. GBPG performed a Level II analysis with the VISCREEN plume visibility model, and following the methods outlined in the *Workbook For Plume Visual Impact Screening and Analysis* (USEPA 1992). VISCREEN is known to yield highly conservative results (i.e., over-predict impacts). At FLM's request, GBPG used a background visual range of 225 kilometers for this analysis. Since there are currently no established screening criteria for Class II areas, GBPG compared the VISCREEN results to Class I area criteria Class I. This analysis resulted in plume contrast and coloration (delta E) values during worst case conditions (worst case meteorology coupled with worst case emissions) above the Class I criteria for adverse visibility impacts. Due to the conservatism of the analysis and the use of Class I screening criteria, visibility impacts on the Class II areas are not expected to be severe.

In summary, GBPG will not likely have a visibility impact on the Superstition Wilderness Class I area, or the nearby Class II Wilderness areas.

B. Acid Deposition

Although not required by PSD regulations, GBPG analyzed the potential for nitrate deposition for Class II areas that are located within 50 kilometres from the proposed facility site. GBPG converted modeled NO₂ concentrations to nitrate deposition rates using an EPA recommended approach. Predicted maximum deposition rates ranged from 1.14 kg per hectare per year at the Woolsey Peak and South Maricopa Mountains Wilderness Areas to 2.17 kg per hectare per year at Signal Mountain Wilderness Area. There are no criteria for acceptable acid deposition values, but GBPG is not anticipated to significantly contribute to acid deposition.

C. Growth Analysis

GBPG plans to employ 25 to 35 personnel on a permanent basis. GBPG hopes to hire from the local communities where possible during the construction phase, thus there should be no substantial increase in community growth or need for additional infrastructure during this period. Due to the small number of permanent employees, it is also not anticipated that the project will result in an increase in secondary emissions associated with permanent growth.

D. Soils and Vegetation Analysis

The NAAQS have been established to protect public health and welfare from any adverse effects of criteria pollutants. This includes impacts on soil and vegetation. Comparing the ambient air quality impacts from the proposed project in Table 7-4 with the NAAQS values is it apparent that the project will have predicted impacts well below all NAAQS. Therefore, it can be concluded that no adverse effects on soils and vegetation are expected.

XI. ENDANGERED SPECIES ACT

GBPG has consulted with US Fish and Wildlife Service (USFWS), the Arizona Department of Game and Fish (ADGF), and the Arizona Department of Agriculture (ADA) to determine if endangered species could be adversely affected by GBPG. In addition, GBPG conducted literature reviews, database searches, and field evaluations. The results of these reviews indicated that the construction and operation of GBPG is not expected to impact threatened, endangered, or special status plants and animals identified by the USFWS, the ADGF, and the ADA.

XII. REGULATORY STREAMLINING

A. Applicable Requirements

The proposed project is subject to a number of applicable New Source Performance Standards (NSPS) that contain requirements much less stringent than the requirements established in the proposed permit for GBPG. The permit conditions are drafted to incorporate the most stringent requirements. The main requirements that have been streamlined are as follows:

1. 40 CFR 60 Subpart Da Requirement NO_x Limit for the Duct Burners

There are three emission limits in Subpart Da that affect the duct burners at GBPG: a particulate limit of 0.03 lb/MMBtu (40 CFR 60.42a(1)), an SO₂ limit of 0.20 lb/MMBtu (40 CFR 60.43a(b)(2)), and a NO_x limit of 1.6 pound per megawatt hour gross energy output on a 30-day rolling average (40 CFR 60.44a(d)(1)). Particulate matter and SO₂ limits, which are more stringent than the above levels are explicitly included in the permit.

The NO_x limit is *implicitly* included in the permit by the limit of 2.5 ppm on a 3-hour rolling average. The calculations demonstrating the streamlining are as follows:

$$\text{Duct Burner NO}_x \text{ Emissions (lb NO}_x \text{ / MW - hr)} = \left(\frac{\text{Duct Burner NO}_x \text{ emissions (lb / hr)}}{\text{Duct Burner Steam Turbine Output (MW)}} \right)$$

- Duct burner NO_x emissions are calculated by taking the difference between NO_x emissions with and without the duct burner operating.
- Duct burner Steam Turbine Output is calculated by converting duct burner firing rate to potential electric power output assuming a minimum efficiency of 33% as follows:

$$\text{Duct Burner SteamTurbineOutput (MW)} = \left(\frac{\text{Duct Burner FiringRate(btu / hr)} \times 33\%}{3413 \text{btu / kw - hr} \times (1000 \text{kw / MW})} \right)$$

At the full duct burner firing rate of 375 MMBtu/hr (LHV) per HRSG, the controlled duct burner NO_x emissions are 3.8 lb/hr and the electrical generation rate attributable to the heat input to each duct burner is 36.26 MW. Therefore, the duct burner emissions in terms of lb NO_x per MW-hr are 0.105 lb/MW-hr (3.8/36.26 = 0.105). This is less 7% of the 1.6 lb/MW-hr Subpart Da limit.

$$\text{Duct Burner SO}_2 \text{ Emissions (lb SO}_2 \text{ / MMBtu(LHV))} = \left(\frac{\text{Duct Burner SO}_2 \text{ emissions (lb / hr)}}{\text{Duct Burner Fuel Input (MMBtu / hr (LHV))}} \right)$$

At the full duct burner firing rate of 375 MMBtu/hr per HRSG, the duct burner SO₂ emissions are 0.9 lb/hr. Therefore, the SO₂ emissions are 0.0024 lb/MMBtu (LHV). This is approximately 1% of the 0.20 lb/MMBtu limit.

$$\text{Duct Burner PM}_{10} \text{ Emissions (lb PM}_{10} \text{ / MMBtu (LHV))} = \left(\frac{\text{Duct Burner PM}_{10} \text{ emissions (lb / hr)}}{\text{Duct Burner Fuel Input (MMBtu / hr (LHV))}} \right)$$

At the full duct burner firing rate of 375 MMBtu/hr per HRSG, the duct burner PM₁₀ emissions are 4.87 lb/hr. Therefore, the PM₁₀ emissions are 0.013 lb/MMBtu (LHV). This is approximately 43% of the 0.030 lb/MMBtu limit.

40 CFR Subpart Da also requires exhaust flow monitoring, and these requirements are included in the Permit. GBPG is allowed to request a waiver from the EPA and MCESD to substitute use of the continuous monitoring system

to monitor fuel input rate and measured Gross Calorific Value (GCV) of the natural gas burned, together with the 40 CFR Part 75 CEMS to demonstrate compliance with 40 CFR Subpart Da. If GBPG elects to request this waiver at some future date, the Permit allows this waiver if approved by the EPA and MCESD.

2. 40 CFR Subpart GG NO_x Emission Limit

40 CFR 60.332(a)(1) limits emissions of NO_x from the combustion turbine to 0.0075% by volume (75 ppmv), corrected to 15% O₂, plus an additional allowance based on the turbine heat rate. At GBPG, the NO_x emissions are limited to 2.5 ppm by volume corrected to 15% O₂. Clearly, the permit limits are more stringent than the Subpart GG limits.

B. Non-Applicable Requirements

The proposed permit contains a section indicating that certain regulations are not applicable to GBPG. There is a very large set of regulations that do not apply to GBPG, but the permit calls out a few specifically in order to avoid future confusion. The rationale for the conclusion that the noted regulations are not applicable is as follows:

1. CAA Section 112(g), *Case by Case MACT* and 40 CFR Part 63, *National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Major Sources of HAPs*

GBPG is not a major federal hazardous air pollutants (HAPs) source, with total HAPs emissions of 19.7 TPY and any a maximum for any single HAP (propylene) of 7.8 TPY.

2. 40 CFR 60 Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971*

Subpart D applies to steam generating units over 250 MMBtu/hr that are not electric generating units. GBPG is an electric generating station, so Subpart D does not apply.

3. 40 CFR 60 Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*

Subpart Db applies to steam generating units over 100 MMBtu/hr that are not subject to Subpart Da. The duct burners are the only "steam generating units" rated at over 100 MMBtu/hr, but the duct burners are rated at over 250 MMBtu/hr and are subject to Subpart Da. Units subject to Subpart Da are not subject to Db.

4. 40 CFR 64, *Compliance Assurance Monitoring (CAM)*

The CAM rule applies only to pollutant-specific emission units that meet all of the following three criteria:

- 1) Pre-control emissions for the unit are greater than major source thresholds (100 tons per year in the case of GBPG);
- 2) The emission unit is subject to an emission limit or standard other than one that is exempt under CAM; and
- 3) The emission unit uses an active control device to meet the emission limit.

A specific exemption to the CAM requirements is made for emission units that are required by a permit to have a continuous compliance determination method such as a Continuous Emissions Monitoring System (CEMS).

The only emission units at GBPG with pre-control emissions over 100 tons per year per emission unit are the NO_x, CO, and PM₁₀ emissions from the Combined Cycle Systems. NO_x from the combustion turbines is controlled by SCR, and CO emissions from the combustion turbines are controlled by the oxidation catalyst; thus making these emissions potentially subject to CAM. However, since the Permit requires CEMS for NO_x and CO emissions from these units, CAM does not apply for these compounds. The PM₁₀ emissions from the combustion turbines are not directed to a control device, therefore these emissions are not subject to CAM. Therefore, overall CAM does not apply to GBPG project.

5. 40 CFR 75.17, *Affected Units Exhausting through a Common Stack*

GBPG uses a separate stack for each combustion turbine/HRSG; therefore, this provision does not apply.

6. Maricopa County Rule 241 – *County Control Technology Requirements*

Rule 241 establishes control technology requirements for sources not subject to Rule 240, federal major source New Source Review (NSR) permitting. For the proposed project, all potentially subject pollutants are subject to Rule 240; therefore, this rule does not apply to GBPG.

7. Maricopa County Rule 245 – *Continuous Monitoring Requirements*

Continuous monitoring requirements for various sources, including fossil fuel-fired steam generators, are contained in Rule 245. However, per Section 306.1 of Rule 245, sources subject to a federal NSPS are exempt from the requirements in Rule 245. The Combustion Turbines and Duct Burners are all subject to NSPS. Thus, the monitoring requirements of Rule 245 are not applicable and are effectively subsumed by the NSPS requirements.

8. Maricopa County Rule 370 – *Hazardous Air Pollutants*

The federal HAPs program is only applicable to major sources of HAPs. GBPG is not a major source of HAPs; therefore, these regulations do not apply.

The state of Arizona has also adopted a state HAPs program under A.R.S. Section 429.06. The applicability thresholds for the state HAPs program are 2.5 TPY or more of any combination of HAPs or 1.0 TPY or more of a single HAP. The State HAPs program will only be effective once the ADEQ adopts implementing regulations; under A.R.S. Section 49-480.04 Maricopa County will be required to implement the state HAPs program in Maricopa County at that time. Hence, currently there is no applicable state HAPs program. Moreover, the exemption for electric utility steam generating units also applies to the state HAPs program.

In absence of the state HAPs program, Maricopa County requests that facilities model HAP emissions to show compliance with a set of Arizona AAQGs. Modeling was submitted for the GBPG facility. As discussed in Section VIII, the results demonstrate that the potential project HAP emissions do not exceed the AAQG.

C. Other Applicable Requirements

1. Maricopa County Rule 270 – Performance Testing

Rule 270 contains performance and compliance testing requirements and establishes requirements for testing criteria, conditions, and reporting of test results. The Rule 270 performance testing requirements are specified in the permit.

2. Maricopa County Rule 300 – Opacity Regulations

Requirements for visible emissions are established in Rule 300. Opacity is to be 20% or less with a few exceptions (start-up, shutdown, or unavoidable combustion irregularities not exceeding three minutes as in Section 302.1). Opacity requirements are contained in the permit, and EPA Reference Method 9 is to be used to determine opacity when required. The proposed combined cycle units will only combust natural gas, which is a clean burning fuel, and such equipment rarely, if ever, exceeds 20% opacity. As a result, no continuous monitoring for opacity is required.

3. Maricopa County Rule 304 and 311, State Rule R18-2-719.c.1, and SIP Rule 31(H) – Particulate Matter

Rule 311 contains PM emission limits for process industries, and since GBPG is not a “process industry”, the rule is not applicable. However, SIP Rule 31(H) includes limitations for fuel burning operations that are applicable. An equation to calculate maximum allowable PM emissions is provided in Section 304.1 for equipment with a heat input rating of 4200 MMBtu/hr or less. The BACT PM emission limits from the combined cycle units will be much less than this limit and, therefore, it is effectively subsumed.

State Rule R18-2-719.c.1 applies to diesel fired fuel burning equipment that is not subject to NSPS. Therefore, the requirements of this rule are applicable only to the emergency fire water pumps and the emergency

generators at GBPG. The emission limits are based on the same equation as for SIP Rule 31(H).

4. Maricopa County Rule 320 – *Odors and Gaseous Air Contaminants*

Sections 306 and 308 of Rule 320 contain SO₂ and NO_x limitations for electrical power plants, respectively. Requirements for SO₂ in Sections 306.1 - 306.4 only apply to equipment burning oil and are, therefore, not applicable to the proposed GBPG. The applicable NO_x requirement at Rule 320, Section 308.1 for gaseous fossil fuel is 0.2 lb/MMBtu (3-hour average, as NO₂). The GBPG permit limit for NO_x is 3 ppmv for a 3-hour average, and is well below the Rule 320 limitation.

5. Maricopa County Rule 360 and 40 CFR Part 60 – *New Source Performance Standards*

Federal authority for NSPS requirements (delineated in 40 CFR Part 60) has been delegated to Maricopa County; therefore, Rule 360 is the effective NSPS regulation. NSPS applicability is discussed in the previous Section XII.B.

6. 40 CFR Part 68 and Federal Clean Air Act Section 112(r)(1) – *Accidental Releases of Toxic Chemicals*

Chemical accidental release prevention requirements have been established in 40 CFR Part 68. Applicability is determined by comparing the amount of a listed substance on-site at a facility to its threshold quantity. GBPG has proposed using an aqueous ammonia solution with greater than 20% ammonia associated with the SCR NO_x control system. The storage quantity will exceed 20,000 lb; therefore, a risk management planning must be prepared prior to storing the ammonia on site. As such, the Permit requires submittal of a Risk Management Plan as required by 40 CFR Part 68.

Regardless of the requirement for a Risk Management Plan, under Section 112(r)(1) of the federal Clean Air Act, GBPG has a general duty to identify, prevent, and minimize the consequences of an accidental release of toxic chemicals.

XIII. TITLE IV APPLICABILITY

GBPG is subject to the acid rain provisions of the Clean Air Act. The permitted emission limits, monitoring, record keeping, reporting and other requirements of the Permit include the acid rain provisions of 40 CFR Parts 72, 73 and 75 that apply to GBPG. The proposed Permit serves as a combined PSD, Title V, and Title IV acid rain permit. GBPG's Acid Rain Permit application is incorporated by reference into the proposed Permit.

GBPG holds no SO₂ allocations since it is a new plant; however, GBPG will have to obtain sufficient SO₂ emission allowances as of the allowance transfer deadline not less than the previous year's actual SO₂ emissions as required by the Acid Rain Program. Since the Acid Rain Program NO_x emissions limits apply

only to coal-fired units, there are no Acid Rain Program NO_x limits for GBPG (40 CFR 76.1).

XIV. MONITORING AND COMPLIANCE DEMONSTRATION PROCEDURES

GBPG will install SCR on each of the Combined Cycle Systems to control NO_x emissions. As part of the Acid Rain Program requirements, CEMS for NO_x are required, and the CEMS will meet the requirements in 40 CFR Part 75.

In order to demonstrate compliance with emission limitations for other pollutants, additional monitoring requirements are specified in the permit. In addition to the NO_x CEMS, CEMS for CO (as well as an O₂ diluent gas monitor) will be required on each combined cycle system. Natural gas flow meters are also required as part of the Acid Rain Program and will be installed on each fuel line to monitor the unit-specific fuel flow to the combustion turbines and duct burners. These monitors will be installed, certified, and operated in accordance with applicable provisions of 40 CFR Parts 60 (Appendices B and F) and 40 CFR Part 75. For VOC and PM₁₀, monitored fuel usage in conjunction with emission factors contained in the Permit Application (unless more representative rates can be demonstrated to the Control Officer) will be used to determine emissions. PM₁₀ emissions from the cooling towers will be calculated using the TDS concentration in the cooling water as determined through monthly testing.

PM₁₀ compliance monitoring will also include a provision to perform a visible emissions observation of the stack emissions from each emission unit each week of operation during which that equipment was used more than 10 hours. If emissions are visible, GBPG shall obtain an opacity reading conducted in accordance with EPA Reference Method 9 by certified reader within three operating days (unless the visible emissions are remedied prior to the three days). The Control Officer may require emissions testing by other EPA- approved Reference Method, such as Reference Method 5, to demonstrate compliance with the particulate matter emission limits of these Permit Conditions.

SO₂ emissions will be determined using the sulfur content in the fuel and fuel usage data. Sulfur content of the fuel will be determined through fuel sulfur content testing according to a "custom" fuel testing schedule that is approved as part of the permit.

As provided in Maricopa County Rule 270, performance testing will be required for NO_x, CO, VOC, and PM₁₀ to demonstrate compliance. Testing will be performed at full load and at reduced load conditions. Initial testing will also be performed for ammonia and HAPs at full load. Testing is performed annually for PM₁₀ and VOC, and every five years for NO_x and CO. However, a relative accuracy test audit (RATA) is required annually for the NO_x and CO monitors. Ammonia testing is required initially and at least every five years unless the ammonia trigger rate is exceeded; in which case testing is required within three months of the exceedance.

XV. CONCLUSION AND PROPOSED ACTION

Based on the information supplied by GBPG, and on the analyses conducted by the Maricopa County Environmental Services Department, MCESD has determined that the proposed GBPG Project will employ BACT, will not cause or contribute to a violation of any federal ambient air quality standard, will not cause any applicable PSD increment to be exceeded, will not cause any AAQG to be exceeded, and will not cause additional adverse air quality impacts.

Therefore, MCESD proposes to issue to GBPP an Air Quality Permit that will serve as an Authority to Construct and operate the facility, subject to the attached permit conditions.